Baskar
10/009919



- key items

(FILE 'CAPLUS' ENTERED AT 15:25:13 ON 12 JUL 2004)
L1 350 SEA FILE=CAPLUS ABB=ON PLU=ON (LAWSON? OR L)(W)INTRACEL LUL? OR LAWSONIA
L2 62 SEA FILE=CAPLUS ABB=ON PLU=ON L1 AND (POLYPEPTIDE OR POLYPROTEIN OR PROTEIN OR PEPTIDE)
L3 11 SEA FILE=CAPLUS ABB=ON PLU=ON L2 AND ANTIBOD?

L3 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 23 Apr 2004
ACCESSION NUMBER: 2004:333823 CAPLUS
DOCUMENT NUMBER: 140:351646
TITLE: Nucleic acid and **polypeptide** sequences from **Lawsonia intracellularis** and their use for diagnosis and prevention of proliferative enteropathy in swine
INVENTOR(S): Kapur, Vivek; Gebhart, Connie J.
PATENT ASSIGNEE(S): Regents of the University of Minnesota, USA
SOURCE: PCT Int. Appl., 87 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2004033631 | A2 | 20040422 | WO 2003-US31318 | 20031001 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-416395P P 20021004
AB The present invention provides nucleic acid mols. unique to **Lawsonia intracellularis**. Complete genome sequences were determined for the **L. intracellularis** chromosome and three plasmids. The invention also provides **polypeptides** encoded by **L. intracellularis** -specific nucleic acid mols., and **antibodies** having specific binding affinity for the **L. intracellularis**-specific **polypeptides**. The invention further provides methods for detection of **L. intracellularis** in a sample using nucleic acid mols., **polypeptides**, and **antibodies** of the invention. The invention addnl. provides methods of preventing a **L. intracellularis** infection in an animal.

L3 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 05 Jul 2002
ACCESSION NUMBER: 2002:503432 CAPLUS

DOCUMENT NUMBER: 137:77871
TITLE: Cloning of genes for novel **Lawsonia intracellularis** outer membrane **proteins** and their use in preparing vaccines for porcine proliferative enteropathy
INVENTOR(S): Jacobs, Antonius A. C.; Vermeij, Paul
PATENT ASSIGNEE(S): Akzo Nobel N.V., Neth.
SOURCE: Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| EP 1219711 | A2 | 20020703 | EP 2001-204919 | 20011214 |
| EP 1219711 | A3 | 20021106 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| JP 2003000276 | A2 | 20030107 | JP 2001-385373 | 20011219 |
| AU 2001097371 | A5 | 20020627 | AU 2001-97371 | 20011220 |

PRIORITY APPLN. INFO.: EP 2000-204660 A 20001220

AB The present invention relates i.a. to nucleic acid sequences encoding novel **Lawsonia intracellularis proteins**. It furthermore relates to DNA fragments, recombinant DNA mols. and live recombinant carriers comprising these sequences. Also it relates to host cells comprising such nucleic acid sequences, DNA fragments, recombinant DNA mols. and live recombinant carriers. Moreover, the invention relates to **proteins** encoded by these nucleotide sequences. The invention also relates to vaccines for combating **Lawsonia intracellularis** infections and methods for the preparation thereof. Finally the invention relates to diagnostic tests for the detection of **Lawsonia intracellularis** DNA, the detection of **Lawsonia intracellularis** antigens and of **antibodies** against **Lawsonia intracellularis**.

L3 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 03 Jun 2002
ACCESSION NUMBER: 2002:415165 CAPLUS
DOCUMENT NUMBER: 137:137337
TITLE: LsaA, an antigen involved in cell attachment and invasion, is expressed by **Lawsonia intracellularis** during infection in vitro and in vivo
AUTHOR(S): McCluskey, Jackie; Hannigan, Joanne; Harris, Jennifer D.; Wren, Brendan; Smith, David G. E.
CORPORATE SOURCE: Zoonotic & Animal Pathogens Research Laboratory, Department of Medical Microbiology, University of Edinburgh, Edinburgh, UK
SOURCE: Infection and Immunity (2002), 70(6), 2899-2907
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal

LANGUAGE: English

AB **Lawsonia intracellularis** has been identified recently as the etiol. agent of proliferative enteropathies, which are characterized by intestinal epithelial hyperplasia and associated moderate immune responses. This disease complex has been reported in a broad range of animals, prevalently in pigs, and **L. intracellularis** has been linked with ulcerative colitis in humans. **L. intracellularis** is an obligate intracellular bacterium, and the pathogenic mechanisms used to cause disease are unknown. Using in vitro-grown organisms as a source of genomic DNA, we identified a **Lawsonia** gene which encodes a surface antigen, LsaA (for **Lawsonia** surface antigen), associated with attachment to and entry into cells. The deduced amino acid sequence of this **protein** showed some similarity to members of a novel **protein** family identified in a number of other bacterial pathogens but for which roles are not fully defined. Transcription of this gene was detected by reverse transcription-PCR in **L. intracellularis** grown in vitro in IEC18 cells and in bacteria present in ileal tissue from infected animals. Immunohistochem. with specific monoclonal **antibody** and immunoblotting with sera from infected animals demonstrated that LsaA **protein** is synthesized by **L. intracellularis** during infection. Expression of this gene during infection in vitro and in vivo suggests that this surface antigen is involved during infection, and phenotypic anal. indicated a role during **L. intracellularis** attachment to and entry into intestinal epithelial cells.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN

ED Entered STN: 26 Apr 2001

ACCESSION NUMBER: 2001:297553 CAPLUS

DOCUMENT NUMBER: 134:321599

TITLE: Cloning of **Lawsonia** genes htrA, ponA, hypC, lysS, ycfW, abc1, and omp100, their encoded **proteins** or **peptides** and therapeutic use in diagnosis and as vaccine

INVENTOR(S): Rosey, Everett Lee

PATENT ASSIGNEE(S): Pfizer Products Inc., USA

SOURCE: Eur. Pat. Appl., 80 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| EP 1094070 | A2 | 20010425 | EP 2000-309125 | 20001017 |
| EP 1094070 | A3 | 20020109 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| US 6605696 | B1 | 20030812 | US 2000-689065 | 20001012 |
| JP 2001169787 | A2 | 20010626 | JP 2000-320736 | 20001020 |

| | | | | | |
|---|---|---|---|---|---|
| US 2003021802 | A1 | 20030130 | US 2002-210296 | | 20020801 |
| US 2003202983 | A1 | 20031030 | US 2003-449462 | | 20030529 |
| PRIORITY APPLN. INFO.: | | | US 1999-160922P | P | 19991022 |
| | | | US 1999-163858P | P | 19991105 |
| | | | US 2000-689065 | A1 | 20001012 |

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in pigs or other animals caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism, such as porcine proliferative enteropathy (PPE). In particular, the present invention provides novel genes htrA, ponA, hypC, lysS, ycfW, abc1, and omp100 derived from **Lawsonia intracellularis** genomic regions A and B. These genes encode sequence homologs to lysyl-tRNA synthetase (gene lysS), transmembrane or integral membrane **protein** (abc1), hydrogenase maturation **protein** (hypC), penicillin binding **protein** (ponA), and periplasmic serine protease **protein** (htrA) resp. The invention also relates to constructing these gene expression vector to produce recombinant **protein** using E. coli. Methods of expressing recombinant htrA and omp100 **proteins** in E. coli are also provided. The invention also provides the immunogenic **peptides** or **proteins** encoded by these genes that are particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

L3 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 24 Nov 2000
ACCESSION NUMBER: 2000:824297 CAPLUS
DOCUMENT NUMBER: 134:1364
TITLE: **Lawsonia**-derived gene tlyA and related hemolysin **polypeptides**, **peptides** and **proteins** and their uses for diagnosis and treatment of avian and porcine infections
INVENTOR(S): Panaccio, Michael; Rosey, Everett Lee; Hasse, Detlef; Ankenbauer, Robert Gerard
PATENT ASSIGNEE(S): Pfizer Products Inc, USA; Agriculture Victoria Services Pty Ltd; Pig Research and Development Corporation
SOURCE: PCT Int. Appl., 86 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000069906 | A1 | 20001123 | WO 2000-AU439 | 20000511 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN,

CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1177213 A1 20020206 EP 2000-924978 20000511
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

NZ 515363 A 20030725 NZ 2000-515363 20000511

PRIORITY APPLN. INFO.: US 1999-134022P P 19990513
WO 2000-AU439 W 20000511

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic TylA hemolysin **peptide**, **polypeptide** or **protein** that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 24 Nov 2000
ACCESSION NUMBER: 2000:824296 CAPLUS
DOCUMENT NUMBER: 134:14022
TITLE: **Lawsonia**-derived gene ompH and related outer membrane **protein** H **polypeptides, peptides** and **proteins** and their uses for diagnosis and treatment of avian and porcine infections
INVENTOR(S): Hasse, Detlef; Panaccio, Michael; Sinistaj, Meri
PATENT ASSIGNEE(S): Pig Research and Development Corporation, Australia; Agriculture Victoria Services Pty Ltd
SOURCE: PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000069905 | A1 | 20001123 | WO 2000-AU438 | 20000511 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN,

CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

| | | | | |
|---|---|---|---|---|
| EP 1183268 | A1 | 20020306 | EP 2000-924977 | 20000511 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| BR 2000011290 | A | 20020521 | BR 2000-11290 | 20000511 |
| NZ 515330 | A | 20030429 | NZ 2000-515330 | 20000511 |
| JP 2003521881 | T2 | 20030722 | JP 2000-618321 | 20000511 |
| AU 767390 | B2 | 20031106 | AU 2000-43860 | 20000511 |

PRIORITY APPLN. INFO.: US 1999-133986P P 19990513
WO 2000-AU438 W 20000511

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic OmpH outer membrane **peptide, polypeptide** or **protein** that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 24 Nov 2000
ACCESSION NUMBER: 2000:824295 CAPLUS
DOCUMENT NUMBER: 133:359825
TITLE: **Lawsonia**-derived gene flgE and related flagellar hook **polypeptides, peptides** and **proteins** and their uses for diagnosis and treatment of avian and porcine infections
INVENTOR(S): Panaccio, Michael; Rosey, Everett Lee; Sinistaj, Meri; Hasse, Detlef; Parsons, Jim; Ankenbauer, Robert Gerard
PATENT ASSIGNEE(S): Pfizer Products Inc., USA; Agriculture Victoria Services Pty Ltd; Pig Research and Development Corporation
SOURCE: PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000069904 | A1 | 20001123 | WO 2000-AU437 | 20000511 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| BR 2000011294 | A | 20020226 | BR 2000-11294 | 20000511 |
| EP 1181315 | A1 | 20020227 | EP 2000-924976 | 20000511 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2003516113 | T2 | 20030513 | JP 2000-618320 | 20000511 |
| NZ 515331 | A | 20030725 | NZ 2000-515331 | 20000511 |
| AU 771376 | B2 | 20040318 | AU 2000-43859 | 20000511 |
| US 2003157120 | A1 | 20030821 | US 2002-9823 | 20020813 |

PRIORITY APPLN. INFO.: US 1999-133973P P 19990513
WO 2000-AU437 W 20000511

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic FlgE flagellar hook **peptide, polypeptide** or **protein** that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 24 Nov 2000
ACCESSION NUMBER: 2000:824294 CAPLUS
DOCUMENT NUMBER: 133:359824
TITLE: **Lawsonia**-derived gene sodC and related superoxide dismutase **polypeptides, peptides** and **proteins** and their uses for diagnosis and treatment of avian and porcine infections
INVENTOR(S): Ankenbauer, Robert Gerard; Hasse, Detlef; Panaccio, Michael; Rosey, Everett Lee; Wright, Catherine
PATENT ASSIGNEE(S): Pfizer Products, Inc., USA; Pig Research and

Development Corp.; Agriculture Victoria Services Pty., Ltd.
SOURCE: PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000069903 | A1 | 20001123 | WO 2000-AU436 | 20000511 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1177212 | A1 | 20020206 | EP 2000-924975 | 20000511 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| BR 2000011292 | A | 20020226 | BR 2000-11292 | 20000511 |
| JP 2003501013 | T2 | 20030114 | JP 2000-618319 | 20000511 |
| NZ 515332 | A | 20040130 | NZ 2000-515332 | 20000511 |

PRIORITY APPLN. INFO.: US 1999-133989P P 19990513
WO 2000-AU436 W 20000511

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic SodC superoxide dismutase **peptide, polypeptide** or **protein** that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 24 Aug 2000
ACCESSION NUMBER: 2000:588529 CAPLUS
DOCUMENT NUMBER: 134:290822
TITLE: Immunohistochemistry and polymerase chain reaction for the detection of **Lawsonia intracellularis** in porcine intestinal tissues with proliferative enteropathy

AUTHOR(S): Kim, Junghyun; Choi, Changsun; Cho, Wan-Seob; Chae, Chanhee
CORPORATE SOURCE: Department of Veterinary Pathology, College of Veterinary Medicine and School of Agricultural Biotechnology, Seoul National University, Suwon, 441-744, S. Korea
SOURCE: Journal of Veterinary Medical Science (2000), 62(7), 771-773
CODEN: JVMSEQ; ISSN: 0916-7250
PUBLISHER: Japanese Society of Veterinary Science
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Detection method of **Lawsonia intracellularis** was studied in formalin-fixed paraffin-embedded intestinal tissues from 5 naturally infected pigs by immunohistochem. with a monoclonal **antibody** against outer membrane **protein** of **L. intracellularis**. Warthin-Starry silver stain revealed clusters of argyrophilic, slightly curved rod-shaped organisms in the apical cytoplasm of enterocytes. Immunohistochem. staining with a **L. intracellularis**-specific monoclonal **antibody** confirmed the presence of the organism in the apical cytoplasm of hyperplastic enterocytes. The presence of **L. intracellularis** in the ileum of pig with proliferative enteropathy was confirmed by PCR further on the basis of amplification of 319-bp products specific for porcine **L. intracellularis** chromosomal DNA. Immunohistochem. and PCR may be a complementary method to confirm the diagnosis of **L. intracellularis** infection in pigs.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 23 Apr 1997
ACCESSION NUMBER: 1997:260161 CAPLUS
DOCUMENT NUMBER: 126:315726
TITLE: In-vitro interactions of **Lawsonia intracellularis** with cultured enterocytes
AUTHOR(S): McOrist, Steven; Mackie, Rebecca A.; Lawson, Gordon H. K.; Smith, David G. E.
CORPORATE SOURCE: Department Veterinary Pathology, University Edinburgh, Midlothian, EH25 9RG, UK
SOURCE: Veterinary Microbiology (1997), 54(3,4), 385-392
CODEN: VMICDQ; ISSN: 0378-1135
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Strains of the obligately intracellular bacterium **Lawsonia intracellularis**, the etiol. agent of porcine proliferative enteropathy, were co-cultured in rat enterocyte cell cultures (IEC-18) and examined ultrastructurally. No regular surface arrays typical of surface or S-layers were visible on any bacterial strain, with or without Triton-X-100 detergent treatment. In sep. expts., there was no difference in the ability of **L. intracellularis** to attach and enter enterocytes with or

without the presence of added bovine plasma fibronectin, or the **peptide** Arg-Gly-Ser. Interestingly, there was an increase in the invasiveness of **L. intracellularis** in the presence of the **peptide** Arg-Gly-Asp (RGD), in a dose-related manner. A reduction was observed in the ability of **L. intracellularis** to invade enterocytes in the presence of monovalent fragments of IgG monoclonal **antibodies** to an outer surface component of **L. intracellularis**. This neutralization showed an **antibody** concentration-dependent titration effect and was not apparent with co-cultures incorporating control **antibodies**. The exact nature of ligand and cell receptor interactions for **L. intracellularis** remain to be determined

L3 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 30 Mar 1993
ACCESSION NUMBER: 1993:119859 CAPLUS
DOCUMENT NUMBER: 118:119859
TITLE: Expression of mouse cathepsin L cDNA in Saccharomyces cerevisiae: evidence that cathepsin L is sorted for targeting to yeast vacuole
AUTHOR(S): Nishimura, Yukio; Kato, Keitaro
CORPORATE SOURCE: Fac. Pharm. Sci., Kyushu Univ., Fukuoka, 812, Japan
SOURCE: Archives of Biochemistry and Biophysics (1992), 298(2), 318-24
CODEN: ABBIA4; ISSN: 0003-9861
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To investigate the intracellular transport mechanism of lysosomal cathepsin L in yeast cells, mouse cathepsin L was expressed in S. cerevisiae by placing the coding region under the control of the promoter of the yeast glyceraldehyde 3-phosphate dehydrogenase (GAPDH) gene. Immunoblotting anal. with an **antibody** specific for rat cathepsin L revealed that yeast cells carrying the cathepsin L coding sequence produced 39- and 30-kDa products, which correspond to rat procathepsin L and the single-chain form of mature cathepsin L, resp. The precursor **polypeptide** showed sensitivity toward endoglycosidase H treatment. Cell fractionation expts. demonstrated that the processed form of 30-kDa cathepsin L was colocalized to the yeast vacuole with the marker enzyme carboxypeptidase Y in a Ficoll step gradient. In the prepared vacuolar fraction, a considerable amount of cathepsin L cofractionated with the vacuolar membranes. Furthermore, phase separation expts. with Triton X-114 provided the first evidence showing that the mature form of cathespin L **polypeptide** is strongly associated with the vacuolar membranes. Therefore, the present results suggest that the mouse cathepsin L precursor is initially synthesized as the proenzyme in yeast cells and then correctly delivered to the vacuole. During the intracellular sorting pathway, procathepsin L undergoes post-translational proteolytic processing to generate the mature enzyme. Based on these lines of evidence, it is proposed that cathepsin L is recognized by mechanisms similar to those for the intracellular sorting and processing of vacuolar **proteins** in the yeast cells.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB' ENTERED AT 15:28:19 ON 12 JUL 2004)
L4 36 S L3
L5 21 DUP REM L4 (15 DUPLICATES REMOVED)

L5 ANSWER 1 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2004-340902 [31] WPIDS
DOC. NO. CPI: C2004-129513
TITLE: New nucleic acid that generates an amplification product from **L. intracellularis** nucleic acid using an appropriate second nucleic acid molecule, useful for treating and preventing **L. intracellularis** infection.
DERWENT CLASS: B04 C06 D16
INVENTOR(S): GEBHART, C J; KAPUR, V
PATENT ASSIGNEE(S): (MINU) UNIV MINNESOTA
COUNTRY COUNT: 106
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 2004033631 | A2 | 20040422 | (200431)* | EN | 87 |

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 2004033631 | A2 | WO 2003-US31318 | 20031001 |

PRIORITY APPLN. INFO: US 2002-416395P 20021004
AN 2004-340902 [31] WPIDS
AB WO2004033631 A UPAB: 20040514
NOVELTY - An isolated nucleic acid comprising a nucleic acid molecule of at least 10 nucleotides in length having at least 75% identity to a sequence not defined in the specification, where any of the molecule that is 10-29 nucleotides in length, under standard amplification conditions, generates an amplification product from **L. intracellularis** nucleic acid using an appropriate second nucleic acid molecule, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) a vector comprising the nucleic acid;
(2) a host cell comprising the vector;
(3) an isolated **polypeptide** encoded by the nucleic acid;

(4) an article of manufacture comprising the **polypeptide**;

(5) an **antibody** having specific binding affinity for the **polypeptide**;

(6) a method for detecting the presence or absence of **L. intracellularis** in a biological sample;

(7) a method of preventing infection by **L. intracellularis** in an animal;

(8) a composition comprising a first oligonucleotide primer and a second oligonucleotide primer, where the first and second primers are each 10 to 50 nucleotides in length, and where in the presence of **L. intracellularis** nucleic acid, generate an amplification product under standard amplification conditions, but do not generate an amplification product in the presence of nucleic acid from tar organism other than **L. intracellularis**; and

(9) an article of manufacture comprising the composition.

ACTIVITY - Antibacterial. No biological data given.

MECHANISM OF ACTION - Immunotherapy.

USE - The nucleic acid and **polypeptides** are useful for treating and preventing **L. intracellularis** infection (claimed).

Dwg.0/3

L5 ANSWER 2 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2003-268316 [26] WPIDS

DOC. NO. CPI: C2003-070160

TITLE: Composition for separating target cells from mixture of cells, has a linker having one end coupled to intracellular marker that binds to molecules in target cells, and the other end coupled to extracellular component.

DERWENT CLASS: B04 D16

INVENTOR(S): PHI-WILSON, J T

PATENT ASSIGNEE(S): (PHIW-I) PHI-WILSON J T; (GUAV-N) GUAVA TECHNOLOGIES INC

COUNTRY COUNT: 101

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 2003016488 | A2 | 20030227 | (200326)* | EN | 11 |
| RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW | | | | | |
| US 2003049836 | A1 | 20030313 | (200326) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 2003016488 | A2 | WO 2002-US26188 | 20020815 |

Searcher : Shears 571-272-2528

US 2003049836 A1 Provisional US 2001-312482P 20010815
US 2002-219852 20020814

PRIORITY APPLN. INFO: US 2002-219852 20020814; US 2001-312482P 20010815
AN 2003-268316 [26] WPIDS
AB WO2003016488 A UPAB: 20030428
NOVELTY - Composition (I) for separating target cells (TC) from mixture of cells, comprises linker (**L**), **intracellular** marker for binding to intracellular molecule (IM) of TC coupled to one end of (L), and extracellular component (EC) coupled to other end of (L), where (L) permits the marker to penetrate cell membrane (CM) and bind to IM to keep one end portion of (L) in cell and other end portion and EC outside CM.

DETAILED DESCRIPTION - A composition (I) for separating target cells (100) from a mixture of cells, comprises a linker (104), an extracellular component (106) coupled to the first end (108) of the linker, and an intracellular marker (112) for binding to an intracellular molecule of target cells coupled to the second end (110) of the linker, where the linker permits the marker to penetrate the cell membrane (102) and bind to the intracellular molecule to keep the one end portion of the linker in the cell and the other end portion and the extracellular component outside the cell membrane.

USE - (I) is useful for separating target molecules from a mixed population of cells, by contacting the cell population with (I) that includes intracellular markers, linkers and extracellular components with the markers attached to one end of linker and the extracellular components attached to the other end of the linker, where the intracellular markers permeate through the cell membrane and bind to the intracellular molecule of target cells while the extracellular components remain outside the cell, and separating the target cells on the basis of the extracellular component (claimed). (I) is useful for isolating human stem cells from umbilical cord blood, bone marrow, peripheral blood or fetal liver.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic diagram of a cell separation system.

Target cells; 100
Cell membrane; 102
Linker; 104
Extracellular component; 106
First end of the linker; 108
Second end of the linker; 110
Intracellular marker 112

Dwg.1/1

L5 ANSWER 3 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-900619 [82] WPIDS
CROSS REFERENCE: 2003-416977 [39]; 2003-895290 [82]
DOC. NO. CPI: C2003-256050
TITLE: New isolated **Lawsonia intracellularis** polynucleotide and **polypeptide**, useful for the prevention and diagnosis of **Lawsonia** infections in susceptible animals, such as pigs.

DERWENT CLASS: B04 C06 D16
INVENTOR(S): ROSEY, E L
PATENT ASSIGNEE(S): (ROSE-I) ROSEY E L
COUNTRY COUNT: 1
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 2003202983 | A1 | 20031030 | (200382)* | | 66 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 2003202983 | A1 Provisional | US 1999-160922P | 19991022 |
| | Provisional | US 1999-163858P | 19991105 |
| | Div ex | US 2000-689065 | 20001012 |
| | | US 2003-449462 | 20030529 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---|---|---|
| US 2003202983 | A1 Div ex | US 6605696 |

PRIORITY APPLN. INFO: US 2003-449462 20030529; US 1999-160922P 19991022; US 1999-163858P 19991105; US 2000-689065 20001012

AN 2003-900619 [82] WPIDS
CR 2003-416977 [39]; 2003-895290 [82]
AB US2003202983 A UPAB: 20031223

NOVELTY - A new isolated polynucleotide molecule (I) comprises:

(a) a sequence encoding **Lawsonia intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 **protein**;

(b) a sequence that is a substantial part of the encoding sequence of (a); or

(c) a sequence homologous to the sequences of (a) or (b).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a polynucleotide molecule comprising a nucleotide sequence greater than 20 nucleotides having promoter activity and found within a fully defined sequence of 5445 bp, given in the specification, from nucleotide 2691-2890, or its complement;

(2) a recombinant vector comprising (I);

(3) a transformed host cell comprising the vector of (2);

(4) a **polypeptide** produced by the transformed host cell of (3);

(5) a genetic construct comprising a polynucleotide molecule that can be used to alter a **Lawsonia** gene, comprising:

(a) polynucleotide molecule comprising a sequence that is otherwise the same as a nucleotide sequence of a htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene, or its homolog, substantial portion, or mutations capable of altering the above mentioned genes; or

(b) a polynucleotide molecule comprising a sequence that naturally flanks in situ the ORF of the htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene, or its homolog, such that transformation of a **Lawsonia** cell with the genetic construct results in altering htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene;

(6) a transformed host cell comprising the genetic construct of (5);

(7) an isolated **polypeptide** comprising:

(a) a **Lawsonia intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 **protein**;

(b) homologs or substantial portions of (a);

(c) a fusion **protein** of the **polypeptide** in (a) or (b) fused to another **protein** or **polypeptide**; or

(d) an analog or derivative of the **polypeptide** in (a), (b) or (c);

(8) a substantially pure **polypeptide** comprising an epitope of HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 **protein** that is specifically reactive with anti-**Lawsonia antibodies**;

(9) an isolated **polypeptide** comprising the sequence encoded by (I);

(10) an isolated **antibody** that specifically reacts with **L. intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 **protein**;

(11) a live attenuated vaccine comprising the transformed cell of (6);

(12) a killed cell vaccine comprising transformed cells of (6) in killed form; and

(13) an immunogenic composition comprising (I) or the **polypeptide** of (7), in combination with a carrier.

ACTIVITY - Antibacterial. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The methods and compositions of the present invention are useful for the prevention and diagnosis of **L. intracellularis** infections in susceptible animals, such as pigs.

Dwg.0/9

L5 ANSWER 4 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2003-416977 [39] WPIDS

CROSS REFERENCE: 2003-895290 [82]; 2003-900619 [82]

DOC. NO. CPI: C2003-110367

TITLE: New isolated **Lawsonia intracellularis** polynucleotide and **polypeptide**, useful for the prevention and diagnosis of **Lawsonia** infections in susceptible animals, such as pigs.

DERWENT CLASS: B04 C06 D16

INVENTOR(S): ROSEY, E L

PATENT ASSIGNEE(S): (ROSE-I) ROSEY E L

COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|

US 2003021802 A1 20030130 (200339)* 64

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 2003021802 | A1 Provisional | US 1999-160922P | 19991022 |
| | Provisional | US 1999-163858P | 19991105 |
| | Cont of | US 2000-689065 | 20001012 |
| | | US 2002-210296 | 20020801 |

PRIORITY APPLN. INFO: US 2002-210296 20020801; US 1999-160922P 19991022; US 1999-163858P 19991105; US 2000-689065 20001012

AN 2003-416977 [39] WPIDS

CR 2003-895290 [82]; 2003-900619 [82]

AB US2003021802 A UPAB: 20031223

NOVELTY - A new isolated polynucleotide molecule (I) comprises:

(a) a sequence encoding **Lawsonia intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 **protein**;

(b) a sequence that is a substantial part of the encoding sequence of (a); or

(c) a sequence homologous to the sequences of (a) or (b).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a polynucleotide molecule comprising a nucleotide sequence greater than 20 nucleotides having promoter activity and found within a fully defined sequence of 5445 bp, given in the specification, from nucleotide 2691-2890, or its complement;

(2) a recombinant vector comprising (I);

(3) a transformed host cell comprising the vector of (2);

(4) a **polypeptide** produced by the transformed host cell of (3);

(5) a genetic construct comprising a polynucleotide molecule that can be used to alter a **Lawsonia** gene, comprising: (a) polynucleotide molecule comprising a sequence that is otherwise the same as a nucleotide sequence of a htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene, or its homolog, substantial portion, or mutations capable of altering the above mentioned genes; or (b) a polynucleotide molecule comprising a sequence that naturally flanks in situ the ORF of the htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene, or its homolog;

(6) a transformed host cell comprising the genetic construct of (5);

(7) an isolated **polypeptide** comprising: (a) a **Lawsonia intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 **protein**; (b) homologs or substantial portions of (a); (c) a fusion **protein** of the **polypeptide** in (a) or (b) fused to another **protein** or **polypeptide**; or (d) an analog or derivative of the **polypeptide** in (a), (b) or (c);

(8) a substantially pure **polypeptide** comprising an epitope of HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100

**protein** that is specifically reactive with anti-**Lawsonia antibodies;**

(9) an isolated **polypeptide** comprising the sequence encoded by (I);

(10) an isolated **antibody** that specifically reacts with **L. intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 **protein;**

(11) a live attenuated vaccine comprising the transformed cell of (6);

(12) a killed cell vaccine comprising transformed cells of (6) in killed form; and

(13) an immunogenic composition comprising (I) or the **polypeptide** of (7), in combination with a carrier.

ACTIVITY - Antibacterial. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The methods and compositions of the present invention are useful for the prevention and diagnosis of **L. intracellularis** infections in susceptible animals, such as pigs.

Dwg.0/9

L5 ANSWER 5 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2003-895290 [82] WPIDS

CROSS REFERENCE: 2001-592540 [67]; 2003-416977 [39]; 2003-900619 [82]

DOC. NO. CPI: C2003-254294

TITLE: New **Lawsonia intracellularis polypeptides**, useful as vaccines, as diagnostic agents, or in preventing infections in susceptible animals such as pigs, e.g. porcine proliferative enteropathy.

DERWENT CLASS: B04 C06 D16

INVENTOR(S): ROSEY, E L

PATENT ASSIGNEE(S): (PFIZ) PFIZER INC; (PFIZ) PFIZER PROD INC

COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 6605696 | B1 | 20030812 | (200382)* | | 62 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 6605696 | B1 Provisional | US 1999-160922P | 19991022 |
| | Provisional | US 1999-163868P | 19991105 |
| | | US 2000-689065 | 20001012 |

PRIORITY APPLN. INFO: US 2000-689065 20001012; US 1999-160922P 19991022; US 1999-163868P 19991105

AN 2003-895290 [82] WPIDS

CR 2001-592540 [67]; 2003-416977 [39]; 2003-900619 [82]

AB US 6605696 B UPAB: 20031223

NOVELTY - An isolated **polypeptide** derived from **Lawsonia intracellularis**, is new.

DETAILED DESCRIPTION - The **polypeptide** comprises: (A) a fully defined sequence of 896 amino acids (P1) given in the specification, which encodes **L. intracellularis** Omp100 **protein**; (B) an amino acid sequence for **L. intracellularis** Omp100 **protein** corresponding to the sequence of P1; (C) **L. intracellularis** Omp100 **protein** corresponding to the sequence of P1, and a fusion **polypeptide** encoding the **L. intracellularis** Omp100 **protein** fused to another **protein** or **polypeptide**; or (D) an epitope of the Omp100 **protein** that is specifically reactive with anti-**Lawsonia antibodies**. An INDEPENDENT CLAIM is included for an immunogenic composition comprising the **polypeptide** cited above and a pharmaceutical carrier.

ACTIVITY - Antibacterial. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The **proteins**, polynucleotides and immunogenic compositions are useful as vaccines, as diagnostic agents, or in preventing **L. intracellularis** infections in susceptible animals such as pigs, e.g. porcine proliferative enteropathy.

Dwg.0/9

L5 ANSWER 6 OF 21 MEDLINE on STN DUPLICATE 1

ACCESSION NUMBER: 2003473292 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14535543
TITLE: Preparation and characterization of polyclonal and monoclonal **antibodies** against **Lawsonia intracellularis**.
AUTHOR: Guedes Roberto M C; Gebhart Connie J
CORPORATE SOURCE: Department of Veterinary Pathobiology, University of Minnesota, Saint Paul, MN 55108, USA.
SOURCE: Journal of veterinary diagnostic investigation : official publication of the American Association of Veterinary Laboratory Diagnosticians, Inc, (2003 Sep) 15 (5) 438-46.
Journal code: 9011490. ISSN: 1040-6387.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200312
ENTRY DATE: Entered STN: 20031011
Last Updated on STN: 20031219
Entered Medline: 20031204

AB Proliferative enteropathy is an intestinal infectious disease caused by the obligate intracellular bacterium **Lawsonia intracellularis**. Immunohistochemistry staining has superior sensitivity over hematoxylin and eosin and silver staining for detecting **L. intracellularis** in histological sections. A **L. intracellularis**-specific monoclonal **antibody** (MAb) produced in the UK (IG4 MAb) has been described in the literature. However, no monoclonal or polyclonal **antibodies** are commercially available.

Therefore, the objective of this study was to produce and characterize new polyclonal and monoclonal **antibodies** against **L. intracellularis** that are suitable for diagnostic use. The new monoclonal (2001 MAb) and polyclonal **antibodies** (1999 PAb) were compared with the IG4 MAb using Western blot analysis of outer membrane **proteins** (OMPs) of 6 **L. intracellularis** isolates, Bilophila wadsworthia and Brachyspira hyodysenteriae and using immunohistochemistry of known positive and negative histologic samples and pure cultures of **L. intracellularis**, B. wadsworthia, B. hyodysenteriae, Salmonella choleraesuis, S. typhimurium, and Escherichia coli K88. Immunogold staining using 2001 MAb was performed to show the specificity of the **antibody** against an **L. intracellularis** surface **protein**. Western blot analysis showed that the 2001 MAb targeted an OMP of 77 kD, which made it different from the IG4 MAb that targeted an 18-kD OMP. The immunogold stain demonstrated the specificity of the 2001 MAb to a surface **protein** of **L. intracellularis**. The polyclonal **antibody** (1999 PAb) targeted 5 OMPs (77, 69, 54, 42, and 36 kD). Both the 2001 MAb and 1999 PAb stained known positive, but not negative, histologic samples. Both the 2001 MAb and 1999 PAb reacted with a pure culture of **L. intracellularis** but not with any other common enteric pathogens. These two new **antibodies** will be useful for immunodiagnosis of **L. intracellularis**.

L5 ANSWER 7 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-557448 [59] WPIDS
DOC. NO. NON-CPI: N2002-441304
DOC. NO. CPI: C2002-158153
TITLE: New immunogenic **polypeptide** comprising epitope of **Lawsonia** spp. **polypeptide** such as fihB, fliR, ntrC, glnH, motA, **polypeptides**, useful in vaccines for treatment of porcine proliferative enteropathy in pigs and birds.
DERWENT CLASS: B04 C06 D16 S03
INVENTOR(S): GOOD, R T; KING, K W; LEEROSEY, E; STRUGNELL, R A; ROSEY, E L
PATENT ASSIGNEE(S): (AGRI-N) AGRIC VICTORIA SERVICES PTY LTD; (AUPO-N) AUSTRALIAN PORK LTD; (PFIZ) PFIZER PROD INC; (GOOD-I) GOOD R T; (KING-I) KING K W; (ROSE-I) ROSEY E L; (STRU-I) STRUGNELL R A
COUNTRY COUNT: 99
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 2002038594 | A1 | 20020516 | (200259)* | EN | 155 |

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA

UG US UZ VN YU ZA ZW
AU 2002014810 A 20020521 (200260)
US 2003103999 A1 20030605 (200339)
EP 1332154 A1 20030806 (200353) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
BR 2001014835 A 20030701 (200356)
JP 2004512851 W 20040430 (200430) 374

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 2002038594 | A1 | WO 2001-AU1462 | 20011109 |
| AU 2002014810 | A | AU 2002-14810 | 20011109 |
| US 2003103999 | A1 Provisional | US 2000-249595P | 20001117 |
| | | US 2001-10160 | 20011109 |
| EP 1332154 | A1 | EP 2001-983297 | 20011109 |
| | | WO 2001-AU1462 | 20011109 |
| BR 2001014835 | A | BR 2001-14835 | 20011109 |
| | | WO 2001-AU1462 | 20011109 |
| JP 2004512851 | W | WO 2001-AU1462 | 20011109 |
| | | JP 2002-541925 | 20011109 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---|---|---|
| AU 2002014810 | A Based on | WO 2002038594 |
| EP 1332154 | A1 Based on | WO 2002038594 |
| BR 2001014835 | A Based on | WO 2002038594 |
| JP 2004512851 | W Based on | WO 2002038594 |

PRIORITY APPLN. INFO: US 2000-249596P 20001117; AU 2000-1381 20001110

AN 2002-557448 [59] WPIDS

AB WO 200238594 A UPAB: 20020916
NOVELTY - An isolated or recombinant immunogenic **polypeptide** (I) which comprises, mimics or cross-reacts with a B-cell or T-cell epitope of a **Lawsonia** spp. **polypeptide** such as fihB, fliR, ntrC, glnH, motA, motB, tlyC, ytfM or ytfN **polypeptides**, is new.

DETAILED DESCRIPTION - An isolated or recombinant immunogenic **polypeptide** (I) which comprises, mimics or cross-reacts with a B-cell or T-cell epitope of a **Lawsonia** spp. **polypeptide** such as fihB, fliR, ntrC, glnH, motA, motB, tlyC, ytfM or ytfN **polypeptides**, is:

(i) a **polypeptide** of **Lawsonia** spp. which comprises an amino acid sequence that has at least about 60% sequence identity overall to a fully defined amino acid (PS) sequence of 207 (S2), 262 (S4), 456 (S6), 137 (S8), 282 (S10), 237 (S12), 348 (S14), 602 (S16), or 1382 (S18) amino acids as given in specification;

(ii) a **polypeptide** of **Lawsonia** spp. which comprises an amino acid sequence which has at least 60% sequence identity overall to an amino acid sequence encoded by **L.**

**intracellularis** (Li) DNA contained within a plasmid (P) having AGAL Accession Nos: NM00/16476 (plasmid pGTE1 glnH); NM00/16477 (plasmid pGTE2 flhB); NM00/16478 (plasmid pGTE3 fliR); NM00/16479 (plasmid pGTE4 motA/B); NM00/16480 (plasmid pGTE5 tlyC); NM00/16481 (plasmid pGTE6 ntrC); NM00/16482 (plasmid pGTE7 ytfM); or NM01/23286 (plasmid pGTE8 ytfN);

(iii) a **polypeptide** which comprises at least about 5 contiguous amino acids of PS;

(iv) a **polypeptide** which comprises at least about 5 contiguous amino acids of amino acid sequence of Li DNA contained within (P);

(v) a **polypeptide** which comprises an amino acid sequence encoded by nucleotide sequence of **Lawsonia** spp. having at least 60% identity overall to a fully defined nucleotide sequence (NS) of 622 (S1), 789 (S3), 1371 (S5), 412 (S7), 849 (S9), 717 (S11), 1047 (S13), 1812 (S15), or 4149 (S17) nucleotides as given in specification;

(vi) a **polypeptide** which comprises an amino acid sequence encoded by a nucleotide sequence of **Lawsonia** spp. having at least 60% sequence identity overall to nucleotide sequence of Li DNA contained with an (P);

(vii) a **polypeptide** encoded by at least 15 contiguous nucleotides of NS;

(viii) a **polypeptide** encoded by at least 15 contiguous nucleotides of nucleotide sequence of Li DNA contained within (P); or

(ix) a homolog, analog or derivative of above mentioned **polypeptides** which mimic a B-cell or T-cell epitope of **Lawsonia** spp.

INDEPENDENT CLAIMS are also included for the following:

(1) a vaccine composition (II) for the prophylaxis or treatment of infection of an animal by **Lawsonia** spp. which comprises an immunogenic component that comprises (I) and one or more carriers, diluents or adjuvants suitable for veterinary or pharmaceutical use;

(2) a combination vaccine composition (III) for the prophylaxis or treatment of infection of an animal by **Lawsonia** spp., comprising:

(i) a first immunogenic component which comprises (I); and

(ii) a second immunogenic component different from first immunogenic component and comprising a Li **polypeptide** such as FlgE, hemolysin, OmpH, SodC, flhB, fliR, ntrC, glnH, motA, motB, tlyC, ytfM, or ytfN **polypeptides** and one or more carriers, diluents or adjuvants suitable for veterinary or pharmaceutical use;

(3) a vaccine vector (IV) that comprises, in an expressible form, an isolated nucleic acid molecule (V) comprising a nucleotide sequence such as:

(i) a **protein**-encoding nucleotide sequence having at least 60% sequence identity overall to a sequence of NS;

(ii) a **protein**-encoding nucleotide sequence having at least 60% identity overall to the **protein**-encoding sequence of Li DNA contained within (P);

(iii) a **protein**-encoding nucleotide sequence which comprises at least about 15 contiguous nucleotides of NS;

(iv) a **protein**-encoding nucleotide sequence which comprises at least 15 contiguous nucleotides of Li DNA contained

within (P);

(v) a **protein**-encoding nucleotide sequence which hybridizes under low stringency condition to the complement of NS;

(vi) a **protein**-encoding nucleotide sequence which hybridizes under low stringency conditions to non-coding strand of Li DNA contained within (P); and

(vii) a homolog, analog or derivative of above mentioned nucleotide sequences which encodes the **polypeptide** that mimics a B-cell or T-cell epitope of **Lawsonia** spp.;

(4) an isolated polyclonal or monoclonal **antibody** molecule (VI) that binds specifically to **Lawsonia** spp. **polypeptide** of flhB, fliR, ntrC, glnH, motA, motB, tlyC, ytfM, or ytfN **polypeptide**, or homolog, analog or derivative of the above mentioned **polypeptide**;

(5) an isolated nucleic acid molecule (N) which consists of a nucleotide sequence encoding **Lawsonia** spp. such as flhB, fliR, ntrC, glnH, motA, motB, tlyC, ytfM, or ytfN;

(6) a probe or primer comprising any one of fully defined 50 oligonucleotide sequences as given in specification such as catattcaaggtacagcatctgatgg, ctcctttacaaaccttgctcc, gctcatctaaagaacactttcc, caaggtagtatacaacttattgg, etc., or complementary nucleotide sequence to the oligonucleotide sequence;

(7) a plasmid having AGAL Accession Nos: NM00/16476 (plasmid pGTE1 glnH); NM00/16477 (plasmid pGTE2 flhB); NM00/16478 (plasmid pGTE3 fliR); NM00/16479 (plasmid pGTE4 motA/B); NM00/16480 (plasmid pGTE5 tlyC); NM00/16481 (plasmid pGTE6 ntrC); NM00/16482 (plasmid pGTE7 ytfM); or NM01/23286 (plasmid pGTE8 ytfN);

(8) a recombinant vector (VII) capable of replication in a host cell, where the vector comprises (N);

(9) a host cell (VIII) comprising (VII);

(10) identifying (M1) whether or not a porcine or avian animal has suffered from a past infection, or is currently infected, with Li or a microorganism that is immunologically cross-reactive with Li;

(11) diagnosing (M2) infection of a porcine or avian animal by Li or a microorganism that is immunologically cross-reactive with Li; and

(12) detecting (M3) Li or related microorganism in a biological sample derived from a porcine or avian animal subject.

ACTIVITY - Antibacterial.

MECHANISM OF ACTION - Vaccine. No supporting data is given.

USE - (I) is useful for identifying whether or not a porcine or avian animal has suffered from a past infection, or is currently infected, with Li or a microorganism that is immunologically cross-reactive with Li. (VI) is useful for diagnosing infection of a porcine or avian animal by Li or a microorganism that is immunologically cross-reactive with Li. (N) is useful as probes or primers for detecting Li or related microorganism in a biological sample derived from a porcine or avian animal subject (all claimed). (I) is preferably useful for vaccinating porcine animals against porcine proliferative enteropathy (PPE). (I) is also useful in vaccines for the prophylaxis and treatment of PPE in birds. (II) is useful for conferring protection against infection by other species of the genus Lawsonia or other microorganisms related to Li.

Dwg.0/1

L5 ANSWER 8 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-521947 [56] WPIDS
DOC. NO. NON-CPI: N2002-413067
DOC. NO. CPI: C2002-147814
TITLE: New **Lawsonia intracellularis proteins**, useful as a vaccine or for manufacturing a vaccine for combating **L. intracellularis** infections, e.g. porcine proliferative enteropathy, which is an important disease in the pig industry.
DERWENT CLASS: B04 C04 D16 S03
INVENTOR(S): JACOBS, A A C; VERMEIJ, P
PATENT ASSIGNEE(S): (ALKU) AKZO NOBEL NV
COUNTRY COUNT: 30
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| EP 1219711 | A2 | 20020703 | (200256)* | EN | 26 |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR | | | | | |
| AU 2001097371 | A | 20020627 | (200256) | | |
| CA 2365494 | A1 | 20020620 | (200256) | EN | |
| JP 2003000276 | A | 20030107 | (200314) | | 71 |
| HU 2001005379 | A2 | 20030128 | (200323) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| EP 1219711 | A2 | EP 2001-204919 | 20011214 |
| AU 2001097371 | A | AU 2001-97371 | 20011220 |
| CA 2365494 | A1 | CA 2001-2365494 | 20011218 |
| JP 2003000276 | A | JP 2001-385373 | 20011219 |
| HU 2001005379 | A2 | HU 2001-5379 | 20011219 |

PRIORITY APPLN. INFO: EP 2000-204660 20001220
AN 2002-521947 [56] WPIDS
AB EP 1219711 A UPAB: 20020903
NOVELTY - **Lawsonia intracellularis proteins** (I) comprising a fully defined sequence at least 70% homologous to the sequence comprising 218 amino acids (P1) or 475 amino acids (P2) given in the specification, or their immunogenic fragments, are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) nucleic acid sequences encoding the **L. intracellularis proteins** (or a part of the nucleic acid sequence that encodes an immunogenic fragment of the **proteins**) comprising a sequence with at least 70% homology with the nucleic acid sequence having 656 bp (NA1) or 1428 bp (NA2) fully defined in the specification;

(2) deoxyribonucleic acid (DNA) fragment comprising the nucleic acid;

(3) a recombinant DNA molecule comprising the nucleic acid

sequences above, or the DNA fragment, under the control of a functionally linked promoter;

(4) a live recombinant carrier comprising the DNA fragment or the recombinant DNA molecule;

(5) a host cell comprising the NA1 or NA2 nucleic acid sequences, the DNA fragment, the recombinant DNA molecule or the live recombinant carrier;

**L. intracellularis** Outer Membrane **Protein**, which has a molecular weight of 19.21 kD, or its immunogenic fragment, obtainable by a process comprising:

(a) subjecting an outer membrane preparation to sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE); and

(b) excision of the 19 or 21 kD band from the gel;

(6) a vaccine for combating **L. intracellularis** infections comprising the NA1 or NA2 nucleic acid sequences, the DNA fragment, the recombinant DNA molecule, the live recombinant carrier, the host cell, or the P1 or P2 **L. intracellularis proteins**; and a pharmaceutical carrier;

(7) preparing the vaccine by admixing the NA1 or NA2 nucleic acid sequences, the DNA fragment, the recombinant DNA molecule, the live recombinant carrier, the host cell, or the P1 or P2 **L. intracellularis proteins**; and a pharmaceutical carrier; and

(8) a diagnostic test for detecting a **L. intracellularis** DNA comprising the NA1 or NA2 nucleic acid sequences, or a fragment of these sequences with a length of at least 12, preferably 18, nucleotides.

ACTIVITY - Antibiotic.

No suitable data given.

MECHANISM OF ACTION - Vaccine.

USE - (I) are useful as a vaccine or for manufacturing a vaccine for combating **L. intracellularis** infections (claimed), e.g. porcine proliferative enteropathy, which an important disease in the pig industry. (I) is also useful for diagnosing **L. intracellularis** infection and for detecting **L. intracellularis** DNA, **L. intracellularis** antigens or **antibodies** against **L. intracellularis**.

Dwg.0/2

L5 ANSWER 9 OF 21 MEDLINE on STN DUPLICATE 2

ACCESSION NUMBER: 2002284767 MEDLINE

DOCUMENT NUMBER: PubMed ID: 12010978

TITLE: LsaA, an antigen involved in cell attachment and invasion, is expressed by **Lawsonia intracellularis** during infection in vitro and in vivo.

AUTHOR: McCluskey Jackie; Hannigan Joanne; Harris Jennifer D; Wren Brendan; Smith David G E

CORPORATE SOURCE: Zoonotic & Animal Pathogens Research Laboratory, Department of Medical Microbiology, Easter Bush Veterinary Centre, University of Edinburgh, Edinburgh, United Kingdom.

SOURCE: Infection and immunity, (2002 Jun) 70 (6) 2899-907. Journal code: 0246127. ISSN: 0019-9567.

Searcher : Shears 571-272-2528

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF498259
ENTRY MONTH: 200206
ENTRY DATE: Entered STN: 20020528
Last Updated on STN: 20020627
Entered Medline: 20020626

AB **Lawsonia intracellularis** has been identified recently as the etiological agent of proliferative enteropathies, which are characterized by intestinal epithelial hyperplasia and associated moderate immune responses. This disease complex has been reported in a broad range of animals, prevalently in pigs, and **L. intracellularis** has been linked with ulcerative colitis in humans. **L. intracellularis** is an obligate intracellular bacterium, and the pathogenic mechanisms used to cause disease are unknown. Using in vitro-grown organisms as a source of genomic DNA, we identified a **Lawsonia** gene which encodes a surface antigen, LsaA (for **Lawsonia** surface antigen), associated with attachment to and entry into cells. The deduced amino acid sequence of this **protein** showed some similarity to members of a novel **protein** family identified in a number of other bacterial pathogens but for which roles are not fully defined. Transcription of this gene was detected by reverse transcription-PCR in **L. intracellularis** grown in vitro in IEC18 cells and in bacteria present in ileal tissue from infected animals. Immunohistochemistry with specific monoclonal **antibody** and immunoblotting with sera from infected animals demonstrated that LsaA **protein** is synthesized by **L. intracellularis** during infection. Expression of this gene during infection in vitro and in vivo suggests that this surface antigen is involved during infection, and phenotypic analysis indicated a role during **L. intracellularis** attachment to and entry into intestinal epithelial cells

L5 ANSWER 10 OF 21 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:176391 BIOSIS
DOCUMENT NUMBER: PREV200200176391
TITLE: Analysis of gene expression in the obligately intracellular bacterial pathogen **Lawsonia intracellularis**.
AUTHOR(S): McCluskey, J. [Reprint author]; Harris, J. [Reprint author]; Smith, D. G. E. [Reprint author]
CORPORATE SOURCE: University of Edinburgh, Edinburgh, UK
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (2001) Vol. 101, pp. 66. print.
Meeting Info.: 101st General Meeting of the American Society for Microbiology. Orlando, FL, USA. May 20-24, 2001. American Society for Microbiology.
ISSN: 1060-2011.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)

LANGUAGE: English
ENTRY DATE: Entered STN: 6 Mar 2002
Last Updated on STN: 6 Mar 2002

AB **Lawsonia intracellularis** is an obligately intracellular pathogen which is the cause of the disease complex known as proliferative enteropathy (PE) or ileitis. **L. intracellularis** is pathogenic in a broad range of animal hosts, disease being most notable in pigs. **L. intracellularis** has a tropism for immature (crypt) epithelial cells and disease is characterised by epithelial hyperplasia in infected crypts. This pathology presumably reflects expression of novel virulence factors during infection. Because methods for genetic manipulation of intracellular bacteria are rudimentary examination of their gene expression requires application of alternative sensitive techniques which generally have involved examination of RNA. Detection of mRNA by RT-PCR (reverse transcription-PCR) is one method which we have used (alongside others) to assess expression of lhyA, a **L. intracellularis** gene which is a representative of a novel family of bacterial haemolysins. lhyA is expressed both in vitro in epithelial cells and in vivo in intestinal mucosa from infected animals. Furthermore, in addition to detection of specific RNA transcripts, **antibody** responses to recombinant LhyA were detected in sera from experimentally-infected animals, confirming **protein** expression during infection. The promoter region upstream from lhyA does not possess typical sigma factor consensus binding sites thus regulation of gene expression in this bacterium appears to differ from others. Fusion of the lhyA promoter region to a dual GFP-CAT reporter plasmid is being applied to examine expression of this gene during infection in vitro and in vivo. Reporter plasmids are being further applied in a promoter trap system generically referred to as "in vivo expression technology" (IVET) to identify genes expressed by **L. intracellularis** during infection through construction of random libraries. Through combination of RNA-based techniques, reporter systems and other analyses of gene expression we have initiated analysis of gene function in this obligately intracellular bacterium.

L5 ANSWER 11 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-016212 [02] WPIDS
DOC. NO. CPI: C2001-004517
TITLE: New immunogenic **Lawsonia** hemolysin **peptide**, nucleic acid and **antibody**, useful in vaccines and for the diagnosis of **Lawsonia** infections, especially in swine.
DERWENT CLASS: B04 D16
INVENTOR(S): ANKENBAUER, R G; HASSE, D; PANACCIO, M; ROSEY, E L
PATENT ASSIGNEE(S): (AGRI-N) AGRIC VICTORIA SERVICES PTY LTD; (PFIZ) PFIZER PROD INC; (PIGR-N) PIG RES & DEV CORP; (AUPO-N) AUSTRALIAN PORK LTD
COUNTRY COUNT: 93
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|

WO 2000069906 A1 20001123 (200102)* EN 95
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000043861 A 20001205 (200113)
EP 1177213 A1 20020206 (200218) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
NZ 515363 A 20030725 (200357)

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 2000069906 | A1 | WO 2000-AU439 | 20000511 |
| AU 2000043861 | A | AU 2000-43861 | 20000511 |
| EP 1177213 | A1 | EP 2000-924978 | 20000511 |
| | | WO 2000-AU439 | 20000511 |
| NZ 515363 | A | NZ 2000-515363 | 20000511 |
| | | WO 2000-AU439 | 20000511 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| AU 2000043861 | A | Based on | WO 2000069906 |
| EP 1177213 | A1 | Based on | WO 2000069906 |
| NZ 515363 | A | Based on | WO 2000069906 |

PRIORITY APPLN. INFO: US 1999-134022P 19990513
AN 2001-016212 [02] WPIDS
AB WO 200069906 A UPAB: 20010110
NOVELTY - Isolated or recombinant **polypeptide** (I) that comprises, mimics or cross-reacts with a B- or T-cell epitope of a hemolysin **polypeptide** from a **Lawsonia** spp.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a vaccine comprising, at least one carrier, diluent or adjuvant and a (I) having at least 70% sequence identity with a fully defined 251 aa sequence (1), (given in the specification), or at least 50% identity overall with aa 1-50 of (1), or their immunogenic homolog, analog or derivative that is immunologically cross-reactive with **L. intracellularis**;

(2) vaccine vector comprising a nucleic acid sequence (II) that encodes (1);

(3) poly- or monoclonal **antibody** (Ab) that binds to **Lawsonia** hemolysin **polypeptide**, or its derivatives, that have at least 70% sequence identity with (1);

(4) an isolated nucleic acid (III) that encodes a **peptide**, oligopeptide or **polypeptide** having at least 70% sequence identity with (1), at least 50% identity overall with aa 1-50 of (1), or its homolog, analog or derivative that

mimics a B- or T-cell epitope, also complements of (III);
(5) a probe or primer containing at least 15 contiguous nucleotides from a 756 bp sequence (2), reproduced, or its complement; and
(6) the plasmid pALK12 (ATCC 207195).
ACTIVITY - Antibacterial.
MECHANISM OF ACTION - Induction of a specific humoral immune response.
USE - (I) are used (i) as antigens in vaccines to prevent or treat infection by **Lawsonia**, in birds and animals, especially pigs, to raise specific **antibodies** (Ab) and to detect past or present infection. Ab are also useful in diagnosis, to detect **L. intracellularis** or immunologically cross-reactive species, also for identification of epitopes in hemolysin. Vectors that contain nucleic acid (II) that encodes (I) are also useful in genetic vaccines, and fragments of (II) are useful as primers or probes for detecting **L. intracellularis** or related microorganisms, in hybridization or amplification assays.
Dwg.0/1

L5 ANSWER 12 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-016211 [02] WPIDS
DOC. NO. CPI: C2001-004516
TITLE: New isolated **Lawsonia** spp. OmpH **polypeptides** and nucleic acids, useful for the prophylaxis, treatment and detection of **Lawsonia** infections.
DERWENT CLASS: B04 D16
INVENTOR(S): HASSE, D; PANACCIO, M; SINISTAJ, M
PATENT ASSIGNEE(S): (AGRI-N) AGRIC VICTORIA SERVICES PTY LTD; (PIGR-N) PIG RES & DEV CORP; (AUPO-N) AUSTRALIAN PORK LTD
COUNTRY COUNT: 93
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 2000069905 | A1 | 20001123 | (200102)* | EN | 84 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW | | | | | |
| AU 2000043860 | A | 20001205 | (200113) | | |
| EP 1183268 | A1 | 20020306 | (200224) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |
| BR 2000011290 | A | 20020521 | (200238) | | |
| NZ 515330 | A | 20030429 | (200334) | | |
| JP 2003521881 | W | 20030722 | (200350) | | 89 |
| AU 767390 | B | 20031106 | (200401) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 2000069905 | A1 | WO 2000-AU438 | 20000511 |
| AU 2000043860 | A | AU 2000-43860 | 20000511 |
| EP 1183268 | A1 | EP 2000-924977 | 20000511 |
| | | WO 2000-AU438 | 20000511 |
| BR 2000011290 | A | BR 2000-11290 | 20000511 |
| | | WO 2000-AU438 | 20000511 |
| NZ 515330 | A | NZ 2000-515330 | 20000511 |
| | | WO 2000-AU438 | 20000511 |
| JP 2003521881 | W | JP 2000-618321 | 20000511 |
| | | WO 2000-AU438 | 20000511 |
| AU 767390 | B | AU 2000-43860 | 20000511 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| AU 2000043860 | A | Based on | WO 2000069905 |
| EP 1183268 | A1 | Based on | WO 2000069905 |
| BR 2000011290 | A | Based on | WO 2000069905 |
| NZ 515330 | A | Based on | WO 2000069905 |
| JP 2003521881 | W | Based on | WO 2000069905 |
| AU 767390 | B | Previous Publ. | AU 2000043860 |
| | | Based on | WO 2000069905 |

PRIORITY APPLN. INFO: US 1999-133986P 19990513

AN 2001-016211 [02] WPIDS

AB WO 200069905 A UPAB: 20010110

NOVELTY - A novel isolated or recombinant immunogenic **polypeptide** mimics or cross-reacts with a B-cell or T-cell epitope of a **Lawsonia** spp. OmpH **polypeptide.**

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated or recombinant immunogenic **polypeptide** comprising:

(i) a **peptide,** oligopeptide or **polypeptide** which comprises an amino acid sequence having at least about 70% sequence identity overall to a fully defined 186 aa sequence (I) (given in the specification); or

(ii) a homolog, analog or derivative of (i) which mimics a B-cell or T-cell epitope of a **Lawsonia** spp. OmpH **polypeptide;**

(2) a vaccine composition for the prophylaxis or treatment of infection of an animal by **Lawsonia** spp., comprising an immunogenic component derived from an isolated or recombinant **polypeptide** having at least about 70% sequence identity overall to (I) or an immunogenic homolog, analog or derivative which is immunologically cross-reactive with **L. intracellularis,** and one or more carriers, diluents or adjuvants;

(3) a combination vaccine composition for the prophylaxis or treatment of infection of an animal by **Lawsonia** spp .comprising:

(i) a first immunogenic component comprising an isolated or recombinant **polypeptide** having at least about 70% sequence

identity to (I) or an immunogenic homolog, analog, or derivative which is immunologically cross-reactive with **L. intracellularis**;

(ii) a second immunogenic component comprising an antigenic **L. intracellularis peptide, polypeptide** or **protein**; and

(iii) one or more carriers, diluents or adjuvants suitable for veterinary or pharmaceutical use;

(4) a vaccine vector that comprises, in an expressible form, an isolated nucleic acid molecule having a nucleotide sequence that encodes (I), such that the immunogenic **polypeptide** is expressible at a level to confer immunity against **Lawsonia** spp., when administered to a porcine or avian animal;

(5) a poly- or monoclonal **antibody** molecule capable of binding specifically to a OmpH **polypeptide** or a derivative of a OmpH **polypeptide** that is derived from **Lawsonia** spp. having at least about 70% sequence identity to (I);

(6) an isolated nucleic acid molecule (NAM) comprising a sequence of nucleotides, or their complements which encode, a **peptide**, oligopeptide or **polypeptide** selected from:

(i) a **peptide**, oligopeptide or **polypeptide** which comprises an amino acid sequence which has at least about 70% sequence identity overall to an amino acid sequence (I); and

(ii) a homolog, analog or derivative of (i) which mimics a B-cell or T-cell epitope of **Lawsonia** spp.;

(7) a method of detecting **L. intracellularis** or related microorganism in a biological sample derived from a porcine or avian animal subject comprising hybridizing one or more probes or primers derived from a fully defined 561 bp nucleotide sequence (NS) (II), or its complements to the sample and then detecting the hybridization using a detection device;

(8) a probe or primer having at least about 15 contiguous nucleotides in length derived from (II) or its complements;

(9) a plasmid designated pALK13 (ATCC No: 207196).

USE - The **polypeptides** are capable of eliciting the production of **antibodies** against **Lawsonia** spp. when administered to an avian or porcine animal (claimed). They can be used for conferring a protective immune response against **Lawsonia** spp. when administered to an avian or porcine animal (claimed). They can be used for the prophylaxis or treatment of an infection of an animal by **Lawsonia** spp. (claimed). The nucleic acids can also be used for prophylaxis or treatment of infections. The products can also be used for detection, e.g. for detecting whether or not a porcine or avian animal has suffered from a past infection or is currently infected with **L. intracellularis**. They are used particularly for porcine proliferative enteropathy (PPE) infections.

Dwg.0/3

L5 ANSWER 13 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-016210 [02] WPIDS
DOC. NO. CPI: C2001-004515
TITLE: New immunogenic **Lawsonia** FlgE **peptide**, its nucleic acid and

**antibody**, useful in vaccines and diagnosis of **Lawsonia** infections, particularly in swine.

DERWENT CLASS: B04 D16

INVENTOR(S): ANKENBAUER, R G; HASSE, D; PANACCIO, M; PARSONS, J; ROZEY, E L; SINISTAJ, M; ROSEY, E L; ANKENBAUER, R

PATENT ASSIGNEE(S): (AGRI-N) AGRIC VICTORIA SERVICES PTY LTD; (PFIZ) PFIZER PROD INC; (PIGR-N) PIG RES & DEV CORP; (AUPO-N) AUSTRALIAN PORK LTD; (ANKE-I) ANKENBAUER R G; (HASS-I) HASSE D; (PANA-I) PANACCIO M; (PARS-I) PARSONS J; (ROSE-I) ROSEY E L; (SINI-I) SINISTAJ M

COUNTRY COUNT: 93

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 2000069904 | A1 | 20001123 | (200102)* | EN | 95 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW | | | | | |
| AU 2000043859 | A | 20001205 | (200113) | | |
| EP 1181315 | A1 | 20020227 | (200222) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |
| BR 2000011294 | A | 20020226 | (200223) | | |
| JP 2003516113 | W | 20030513 | (200334) | | 102 |
| US 2003157120 | A1 | 20030821 | (200356) | | |
| NZ 515331 | A | 20030725 | (200357) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 2000069904 | A1 | WO 2000-AU437 | 20000511 |
| AU 2000043859 | A | AU 2000-43859 | 20000511 |
| EP 1181315 | A1 | EP 2000-924976 | 20000511 |
| | | WO 2000-AU437 | 20000511 |
| BR 2000011294 | A | BR 2000-11294 | 20000511 |
| | | WO 2000-AU437 | 20000511 |
| JP 2003516113 | W | JP 2000-618320 | 20000511 |
| | | WO 2000-AU437 | 20000511 |
| US 2003157120 | A1 | WO 2000-AU437 | 20000511 |
| | | US 2002-9823 | 20020813 |
| NZ 515331 | A | NZ 2000-515331 | 20000511 |
| | | WO 2000-AU437 | 20000511 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| AU 2000043859 | A | Based on | WO 2000069904 |
| EP 1181315 | A1 | Based on | WO 2000069904 |

Searcher : Shears 571-272-2528

BR 2000011294 A Based on WO 2000069904
JP 2003516113 W Based on WO 2000069904
NZ 515331 A Based on WO 2000069904

PRIORITY APPLN. INFO: US 1999-133973P 19990513
AN 2001-016210 [02] WPIDS
AB WO 200069904 A UPAB: 20030906
NOVELTY - Isolated or recombinant **polypeptide** (I) that comprises, mimics or cross-reacts with a B- or T-cell epitope of a FlgE (flagellar hook) **polypeptide** from a **Lawsonia** spp.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a vaccine comprising,at least one carrier, diluent or adjuvant and a (I) that has at least 60% sequence identity overall with a fully defined 502 aa sequence (1), (given in the specification) or its immunogenic homolog, analog or derivative that is immunologically cross-reactive with **L. intracellularis**;

(2) a vaccine vector comprising, in expressible form, a nucleic acid sequence (II) that encodes (1);

(3) a poly- or mono-clonal **antibody** (Ab) that binds to **Lawsonia** FlgE **polypeptide**, or its derivatives, that have at least 60% sequence identity with (1);

(4) an isolated nucleic acid (III) that encodes a **peptide**, oligopeptide or **polypeptide** having at least 60% sequence identity with (1) or its homolog, analog or derivative that mimics a B- or T-cell epitope, also complements of (III);

(5) a probe or primer containing at least 15 contiguous nucleotides from a fully defined 1509 bp sequence (2), (given in the specification) or its complement; and

(6) a plasmid pALK11 (ATCC 207156).

ACTIVITY - Antibacterial.

MECHANISM OF ACTION - Induction of a specific humoral immune response. No data given.

USE - (I) are used as antigens in vaccines to prevent or treat infection by **Lawsonia**, in birds and animals, especially pigs, to raise specific **antibodies** (Ab) and to detect past or present infection. Ab are also useful in diagnosis, to detect **L. intracellularis** or immunologically cross-reactive species (claimed), also for identification of epitopes in FlgE. Vectors that contain nucleic acid (II) that encodes (I) are also useful in genetic vaccines, and fragments of (II) are useful as primers or probes for detecting **L. intracellularis** or related microorganisms, in hybridization or amplification assays.

Dwg.0/1

L5 ANSWER 14 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-031924 [04] WPIDS
DOC. NO. CPI: C2001-009790
TITLE: Isolated or recombinant **polypeptide** for treating porcine and avian species against **Lawsonia intracellularis** infection, comprises, mimics or cross-reacts with

the B or T cell epitope of **Lawsonia** SodC **polypeptide.**

DERWENT CLASS: B04 D16

INVENTOR(S): ANKENBAUER, R G; HASSE, D; PANACCIO, M; ROSEY, E L; WRIGHT, C; ANKENBAUER, R

PATENT ASSIGNEE(S): (AGRI-N) AGRIC VICTORIA SERVICES PTY LTD; (PFIZ) PFIZER PROD INC; (PIGR-N) PIG RES & DEV CORP; (AUPO-N) AUSTRALIAN PORK LTD

COUNTRY COUNT: 93

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 2000069903 | A1 | 20001123 | (200104)* | EN | 85 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW | | | | | |
| AU 2000043858 | A | 20001205 | (200113) | | |
| EP 1177212 | A1 | 20020206 | (200218) | EN | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |
| BR 2000011292 | A | 20020226 | (200223) | | |
| JP 2003501013 | W | 20030114 | (200306) | | 89 |
| NZ 515332 | A | 20040130 | (200414) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 2000069903 | A1 | WO 2000-AU436 | 20000511 |
| AU 2000043858 | A | AU 2000-43858 | 20000511 |
| EP 1177212 | A1 | EP 2000-924975 | 20000511 |
| | | WO 2000-AU436 | 20000511 |
| BR 2000011292 | A | BR 2000-11292 | 20000511 |
| | | WO 2000-AU436 | 20000511 |
| JP 2003501013 | W | JP 2000-618319 | 20000511 |
| | | WO 2000-AU436 | 20000511 |
| NZ 515332 | A | NZ 2000-515332 | 20000511 |
| | | WO 2000-AU436 | 20000511 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| AU 2000043858 | A | Based on | WO 2000069903 |
| EP 1177212 | A1 | Based on | WO 2000069903 |
| BR 2000011292 | A | Based on | WO 2000069903 |
| JP 2003501013 | W | Based on | WO 2000069903 |
| NZ 515332 | A | Based on | WO 2000069903 |

PRIORITY APPLN. INFO: US 1999-133989P 19990513

AN 2001-031924 [04] WPIDS

AB WO 200069903 A UPAB: 20010118
NOVELTY - An isolated or recombinant immunogenic **polypeptide** (I) which comprises, mimics or cross-reacts with a B-cell or T-cell epitope of a **Lawsonia** SodC **polypeptide**, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a vaccine composition (II) for the prophylaxis or treatment of infection of an animal by **Lawsonia** comprising an immunogenic component which comprises (I), which is immunologically cross-reactive with **Lawsonia intracellularis** and one or more carriers, diluents or adjuvants suitable for veterinary or pharmaceutical use;

(2) a combination vaccine composition (III) for the prophylaxis or treatment of infection of an animal by **Lawsonia** comprising, a first immunogenic component which comprises (I), a second immunogenic component comprising an antigenic **L. intracellularis peptide, polypeptide** or **protein** and one or more carriers, diluents or adjuvants suitable for veterinary or pharmaceutical use;

(3) a vaccine vector (IV) comprising, in an expressible form, an isolated nucleic acid molecule having a nucleotide sequence that encodes an isolated or recombinant immunogenic **polypeptide** which comprises the sequence (S) such that the immunogenic **polypeptide** is expressible at a level sufficient to confer immunity against **Lawsonia**, when administered to a porcine or avian animal;

(4) a polyclonal or monoclonal **antibody** molecule (V) that is capable of binding specifically to (I);

(5) an isolated nucleic acid molecule (VI) that encodes (I), or its complement;

(6) a probe or primer (VII) having at least 15 contiguous nucleotides in length derived from the fully defined sequence of 543 base pairs (bp) as given in the specification or its complement; and

(7) a plasmid designated pALK14 (ATCC 207155).

ACTIVITY - Antibacterial.
No biological data is given.
MECHANISM OF ACTION - Vaccine.
No biological data is given.

USE - (I) is useful for diagnosing infection of a porcine or avian animal or identifying whether or not the animal has suffered from a past infection or is currently infected with **L. intracellularis** or a microorganism that is immunologically cross-reactive to it, by contacting whole serum, blood lymph nodes, ileum, caecum, small intestine, large intestine, feces or rectal swab derived from the animal with (V) or (I) for a time and under conditions sufficient for an antigen:**antibody** complex to form and detecting the complex formed. (VII) is useful for detecting **L. intracellularis** or related microorganisms in a sample derived from the animal by hybridizing (VII) or its complement to the sample and then detecting the hybridization using a nucleic acid based hybridization or amplification reaction. (I) is useful in the preparation of a medicament for the treatment and prophylaxis of porcine proliferative enteropathy (PPE) in animals, particularly porcine or avian animals. (IV) is useful for producing a proteinaceous immunogenic component of (II) or (III) or is useful in a DNA vaccine. (II) and (III) are useful for treatment and/or

prophylaxis of porcine and/or avian species against any bacterium belonging to the same serovar or serogroup as **L. intracellularis**.
Dwg.0/0

L5 ANSWER 15 OF 21 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2001041976 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10945299
TITLE: Immunohistochemistry and polymerase chain reaction for the detection of **Lawsonia intracellularis** in porcine intestinal tissues with proliferative enteropathy.
AUTHOR: Kim J; Choi C; Cho W S; Chae C
CORPORATE SOURCE: Department of Veterinary Pathology, College of Veterinary Medicine and School of Agricultural Biotechnology, Seoul National University, Suwon, Kyounggi-Do, Republic of Korea.
SOURCE: Journal of veterinary medical science / the Japanese Society of Veterinary Science, (2000 Jul) 62 (7) 771-3.
Journal code: 9105360. ISSN: 0916-7250.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200012
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001207

AB Detection method of **Lawsonia intracellularis** was studied in formalin-fixed paraffin-embedded intestinal tissues from 5 naturally infected pigs by immunohistochemistry with a monoclonal **antibody** against outer membrane **protein** of **L. intracellularis**. Warthin-Starry silver stain revealed clusters of argyrophilic, slightly curved rod-shaped organisms in the apical cytoplasm of enterocytes. Immunohistochemical staining with a **L. intracellularis**-specific monoclonal **antibody** confirmed the presence of the organism in the apical cytoplasm of hyperplastic enterocytes. The presence of **L. intracellularis** in the ileum of pig with proliferative enteropathy was confirmed by polymerase chain reaction (PCR) further on the basis of amplification of 319 base pair products specific for porcine **L. intracellularis** chromosomal DNA. Immunohistochemistry and PCR may be a complementary method to confirm the diagnosis of **L. intracellularis** infection in pigs.

L5 ANSWER 16 OF 21 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:457260 SCISEARCH
THE GENUINE ARTICLE: 323LF
TITLE: Production and characterization of biologically active human GM-CSF secreted by genetically modified plant cells
AUTHOR: James E A; Wang C L; Wang Z P; Reeves R; Shin J H; Magnuson N S; Lee J M (Reprint)

CORPORATE SOURCE: WASHINGTON STATE UNIV, DEPT CHEM ENGN, PULLMAN, WA 99164 (Reprint); WASHINGTON STATE UNIV, DEPT CHEM ENGN, PULLMAN, WA 99164; WASHINGTON STATE UNIV, SCH MOL BIOSCI, PULLMAN, WA 99164
COUNTRY OF AUTHOR: USA
SOURCE: PROTEIN EXPRESSION AND PURIFICATION, (JUN 2000) Vol. 19, No. 1, pp. 131-138.
Publisher: ACADEMIC PRESS INC, 525 B ST, STE 1900, SAN DIEGO, CA 92101-4495.
ISSN: 1046-5928.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 25

*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB Human. granulocyte-macrophage colony-stimulating factor (GM-CSF), a hemopoietic growth factor, was produced and secreted from tobacco cell suspensions. The GM-CSF cDNA was carried by a binary vector under the control of the CaMV 35S promoter and the T7 terminator. In addition, a 5'-nontranslated region from the tobacco etch virus (TEV leader sequence) was fused to the N-terminal end of the GM-CSF transgene, For ease of purification, a g-His tag was added to the 3' end of the GM-CSF cDNA. Addition of the TEV leader sequence increased **protein** production more than twofold compared to non-TEV controls, Initial batch cultivation studies indicated a maximum of 250 mu g/L extracellular and 150 mu g/**L** **intracellular** GM-CSF. Western blot analysis detected multiple **peptides** with masses from 14 to 30 kDa in the extracellular medium. The plant-produced GM-CSF was biologically active and could be bound to a nickel affinity matrix, indicating that both the receptor-binding region and the g-His tag were functional. The batch production of GM-CSF was compared with the production of other recombinant **proteins** secreted by transformed tobacco cells. The recovery of secreted GM-CSF was increased by the addition of stabilizing **proteins** and by increasing salt in the growth medium to physiological levels. (C) 2000 Academic Press.

L5 ANSWER 17 OF 21 MEDLINE on STN
ACCESSION NUMBER: 1998198779 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9539372
TITLE: Specific detection of **Lawsonia** **intracellularis** in porcine proliferative enteropathy inferred from fluorescent rRNA in situ hybridization.
AUTHOR: Boye M; Jensen T K; Moller K; Leser T D; Jorsal S E
CORPORATE SOURCE: Danish Veterinary Laboratory, Copenhagen V.. mbo@svs.dk
SOURCE: Veterinary pathology, (1998 Mar) 35 (2) 153-6.
Journal code: 0312020. ISSN: 0300-9858.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199806
ENTRY DATE: Entered STN: 19980611

Last Updated on STN: 19980611
Entered Medline: 19980604

AB Fluorescent in situ hybridization targeting 16S ribosomal RNA was used for specific detection of the obligate intracellular bacterium **Lawsonia intracellularis** in enterocytes from pigs affected by proliferative enteropathy. A specific oligonucleotide probe was designed and the specificity of the probe was determined by simultaneous comparison with indirect immunofluorescence assay for detection of **L. intracellularis** in formalin-fixed tissue samples from 15 pigs affected by porcine proliferative enteropathy. We used 10 tissue samples from pigs without proliferative mucosal changes as negative controls. The results showed that the oligonucleotide probe is specific for **L. intracellularis** and that fluorescent in situ hybridization targeting ribosomal RNA is a suitable and fast method for specific detection and histological recognition of **L. intracellularis** in formalin-fixed tissue.

L5 ANSWER 18 OF 21 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1997-310605 [28] WPIDS
DOC. NO. CPI: C1997-099977
TITLE: Vaccine for treating or preventing **Lawsonia intracellularis** infection - especially in pigs, containing non-pathogenic form of bacterium or its components.
DERWENT CLASS: B04 C06 D16
INVENTOR(S): HASSE, D; PANACCIO, M
PATENT ASSIGNEE(S): (DARA-N) DARATECH PTY LTD; (PIGR-N) PIG RES & DEV CORP; (AGRI-N) AGRIC VICTORIA SERVICES PTY LTD
COUNTRY COUNT: 75
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 9720050 | A1 | 19970605 | (199728)* | EN | 94 |
| RW: AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG | | | | | |
| W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN | | | | | |
| AU 9676141 | A | 19970619 | (199741) | | |
| EP 871735 | A1 | 19981021 | (199846) | EN | |
| R: AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC NL PT RO SE SI | | | | | |
| CN 1203630 | A | 19981230 | (199920) | | |
| NZ 322398 | A | 20000228 | (200017) | | |
| BR 9611623 | A | 19991228 | (200018) | | |
| JP 2000502054 | W | 20000222 | (200020) | | 95 |
| AU 718333 | B | 20000413 | (200028) | | |
| MX 9804261 | A1 | 19990501 | (200056) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|

| | | | |
|---|---|---|---|
| WO 9720050 | A1 | WO 1996-AU767 | 19961129 |
| AU 9676141 | A | AU 1996-76141 | 19961129 |
| EP 871735 | A1 | EP 1996-938863 | 19961129 |
| | | WO 1996-AU767 | 19961129 |
| CN 1203630 | A | CN 1996-198666 | 19961129 |
| NZ 322398 | A | NZ 1996-322398 | 19961129 |
| | | WO 1996-AU767 | 19961129 |
| BR 9611623 | A | BR 1996-11623 | 19961129 |
| | | WO 1996-AU767 | 19961129 |
| JP 2000502054 | W | WO 1996-AU767 | 19961129 |
| | | JP 1997-520010 | 19961129 |
| AU 718333 | B | AU 1996-76141 | 19961129 |
| MX 9804261 | A1 | MX 1998-4261 | 19980528 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| AU 9676141 | A | Based on | WO 9720050 |
| EP 871735 | A1 | Based on | WO 9720050 |
| NZ 322398 | A | Based on | WO 9720050 |
| BR 9611623 | A | Based on | WO 9720050 |
| JP 2000502054 | W | Based on | WO 9720050 |
| AU 718333 | B | Previous Publ. | AU 9676141 |
| | | Based on | WO 9720050 |

PRIORITY APPLN. INFO: AU 1995-6911 19951130; AU 1995-6910 19951130

AN 1997-310605 [28] WPIDS

AB WO 9720050 A UPAB: 19970709

Novel vaccine for the prophylaxis or treatment of **Lawsonia intracellularis**, or related microorganism (RM), infection in animals and birds, comprises an immunogenic, non-pathogenic form of **L. intracellularis**, or a RM, or an immunogenic component, plus diluents and/or adjuvants. Also new are: (1) isolated nucleic acid molecule having 1 of the 14 sequences given in the specification, or a sequence with at least 40% similarity, which is capable of hybridising to it under conditions of low stringency, and encodes an immunogenic **peptide**, **polypeptide** or **protein** of **L. intracellularis**, or a RM; and (2) genetic vaccine comprising the nucleic acid molecule.

USE - The vaccines are especially administered to pigs in which **L. intracellularis**, or a RM, causes porcine proliferative enteropathy (PPE). Also contemplated (not claimed) is the use of **antibodies** (Ab) specific to **L. intracellularis**, or RM, components in immunotherapy or vaccination, or for diagnosing infection or monitoring the effects of vaccination or treatment. Natural Ab can be detected using recombinant **L. intracellularis**, or RM, **proteins**, etc..

ADVANTAGE - The vaccine is an effective alternative to treatment with antibiotics.

Dwg.0/4

L5 ANSWER 19 OF 21 MEDLINE on STN DUPLICATE 4

ACCESSION NUMBER: 97254956 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9100338
TITLE: In-vitro interactions of **Lawsonia intracellularis** with cultured enterocytes.
AUTHOR: McOrist S; Mackie R A; Lawson G H; Smith D G
CORPORATE SOURCE: Department of Veterinary Pathology, University of Edinburgh, Easter Bush, Midlothian, UK.
SOURCE: Veterinary microbiology, (1997 Mar) 54 (3-4) 385-92. Journal code: 7705469. ISSN: 0378-1135.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199706
ENTRY DATE: Entered STN: 19970630
Last Updated on STN: 20000303
Entered Medline: 19970619

AB Strains of the obligately intracellular bacterium **Lawsonia intracellularis**, the etiologic agent of porcine proliferative enteropathy, were co-cultured in rat enterocyte cell cultures (IEC-18) and examined ultrastructurally. No regular surface arrays typical of surface or S-layers were visible on any bacterial strain, with or without Triton-X-100 detergent treatment. In separate experiments, there was no difference in the ability of **L. intracellularis** to attach and enter enterocytes with or without the presence of added bovine plasma fibronectin, or the **peptide** Arg-Gly-Ser. Interestingly, there was an increase in the invasiveness of **L. intracellularis** in the presence of the **peptide** Arg-Gly-Asp (RGD), in a dose-related manner. A reduction was observed in the ability of **L. intracellularis** to invade enterocytes in the presence of monovalent fragments of IgG monoclonal **antibodies** to an outer surface component of **L. intracellularis**. This neutralization showed an **antibody** concentration-dependent titration effect and was not apparent with co-cultures incorporating control **antibodies**. The exact nature of ligand and cell receptor interactions for **L. intracellularis** remain to be determined.

L5 ANSWER 20 OF 21 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 97218646 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9066083
TITLE: Intracellular Campylobacter-like organisms associated with rectal prolapse and proliferative enteroproctitis in emus (Dromaius novaehollandiae).
AUTHOR: Lemarchand T X; Tully T N Jr; Shane S M; Duncan D E
CORPORATE SOURCE: Department of Pathology, School of Veterinary Medicine, Louisiana State University, Baton Rouge 70803, USA.
SOURCE: Veterinary pathology, (1997 Mar) 34 (2) 152-6. Journal code: 0312020. ISSN: 0300-9858.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

Searcher : Shears 571-272-2528

ENTRY MONTH: 199705
ENTRY DATE: Entered STN: 19970602
Last Updated on STN: 20000303
Entered Medline: 19970522

AB Rectal prolapse was the presenting clinical finding in a group of juvenile emus (Dromaius novaehollandiae). Gross findings included severely thickened and rugose distal rectal mucosae. Histologically, there were thickened villi, enterocyte hyperplasia, dilated glands filled with mucus and heterophils, and a dense infiltrate of heterophils, macrophages, lymphocytes, and plasma cells in the lamina propria. Examination of Warthin-Starry silver-stained sections revealed numerous apically located comma-shaped intracytoplasmic bacteria approximately 1 x 3 microns in size. Campylobacter-like organisms morphologically compatible with ileal symbiont intracellularis now known as **Lawsonia intracellularis** were seen via electron microscopy. Bacteria were further characterized by indirect immunofluorescence using monoclonal **antibody** specific for the 25-27-kd outer membrane **protein** of **L. intracellularis**
.

L5 ANSWER 21 OF 21 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 2003-000276 JAPIO
TITLE: **LAWSONIA INTRACELLULIS** VACCINE
INVENTOR: JACOBS ANTONIUS ARNOLDUS C; VERMEIJ PAUL
PATENT ASSIGNEE(S): AKZO NOBEL NV
PATENT INFORMATION:

| PATENT NO | KIND | DATE | ERA | MAIN IPC |
|---|---|---|---|---|
| JP 2003000276 | A | 20030107 | Heisei | C12N015-09 |

APPLICATION INFORMATION
STN FORMAT: JP 2001-385373 20011219
ORIGINAL: JP2001385373 Heisei
PRIORITY APPLN. INFO.: EP 2000-204660 20001220
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2003

AN 2003-000276 JAPIO
AB PROBLEM TO BE SOLVED: To develop methods for diagnosing, preventing and treating swine proliferative intestinal diseases. SOLUTION: This invention relates to nucleic acid sequences encoding novel **Lawsonia intracellularis proteins**
. It furthermore relates to DNA fragments, recombinant DNA molecules and live recombinant carriers comprising these sequences. Also it relates to host cells comprising such nucleic acid sequences, DNA fragments, recombinant DNA molecules and live recombinant carriers. Moreover, the invention relates to **proteins** encoded with these nucleotide sequences. The invention also relates to vaccines for combating **Lawsonia intracellularis** infections and methods for the preparation thereof. Finally, the invention relates to diagnostic tests for the detection of **Lawsonia intracellularis** DNA, the detection of **Lawsonia intracellularis** antigens and of **antibodies** against **Lawsonia**

**intracellularis.**


(FILE 'USPATFULL' ENTERED AT 15:31:40 ON 12 JUL 2004)
L1 350 SEA FILE=CAPLUS ABB=ON PLU=ON (LAWSON? OR L)(W)INTRACELLUL? OR LAWSONIA
L6 29 SEA FILE=USPATFULL ABB=ON PLU=ON L1(S)(POLYPEPTIDE OR POLYPROTEIN OR PROTEIN OR PEPTIDE)
L7 13 SEA FILE=USPATFULL ABB=ON PLU=ON L6(S)ANTIBOD?

L7 ANSWER 1 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2004:109095 USPATFULL
TITLE: Nucleic acids and corresponding proteins entitled 191P4D12(b) useful in treatment and detection of cancer
INVENTOR(S): Raitano, Arthur B., Los Angeles, CA, UNITED STATES
Challita-Eid, Pia M., Encino, CA, UNITED STATES
Jakobovits, Aya, Beverly Hills, CA, UNITED STATES
Faris, Mary, Los Angeles, CA, UNITED STATES
Ge, Wangmao, Culver City, CA, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2004083497 | A1 | 20040429 | |
| APPLICATION INFO.: | US 2003-422571 | A1 | 20030423 | (10) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 2002-404306P | 20020816 (60) |
| | US 2002-423290P | 20021101 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MORRISON & FOERSTER LLP, 3811 VALLEY CENTRE DRIVE, SUITE 500, SAN DIEGO, CA, 92130-2332
NUMBER OF CLAIMS: 46
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 77 Drawing Page(s)
LINE COUNT: 24550
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A novel gene 191P4D12(b) and its encoded protein, and variants thereof, are described wherein 191P4D12(b) exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table I. Consequently, 191P4D12(b) provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 191P4D12(b) gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 191P4D12(b) can be used in active or passive immunization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 800/009.000
INCLS: 424/155.100; 435/006.000; 435/007.230; 435/069.100; 435/320.100; 435/325.000; 514/044.000; 536/023.500; 530/350.000

NCL NCLM: 800/009.000
NCLS: 424/155.100; 435/006.000; 435/007.230; 435/069.100; 435/320.100; 435/325.000; 514/044.000; 536/023.500; 530/350.000

L7 ANSWER 2 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2004:82312 USPATFULL
TITLE: Nucleic acid and corresponding protein entitled 151P3D4 useful in treatment and detection of cancer
INVENTOR(S): Challita-Eid, Pia M., Encino, CA, UNITED STATES
Raitano, Arthur B., Los Angeles, CA, UNITED STATES
Faris, Mary, Los Angeles, CA, UNITED STATES
Hubert, Rene S., Los Angeles, CA, UNITED STATES
Morrison, Karen Jane Meyrick, Santa Monica, CA, UNITED STATES
Morrison, Robert Kendall, Santa Monica, CA, UNITED STATES
Ge, Wangmao, Culver City, CA, UNITED STATES
Jakobovits, Aya, Beverly Hills, CA, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2004062761 | A1 | 20040401 | |
| APPLICATION INFO.: | US 2002-120907 | A1 | 20020409 | (10) |

| | NUMBER | DATE | |
|---|---|---|---|
| PRIORITY INFORMATION: | US 2001-286630P | 20010425 | (60) |
| | US 2001-282739P | 20010410 | (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Kate H. Murashige, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130-2332
NUMBER OF CLAIMS: 51
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 58 Drawing Page(s)
LINE COUNT: 27954
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A novel gene (designated 151P3D4) and its encoded protein, and variants thereof, are described wherein 151P3D4 exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table I. Consequently, 151P3D4 provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 151P3D4 gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 151P3D4 can be used in active or passive immunization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 424/130.100
INCLS: 530/387.100; 435/326.000; 530/350.000; 800/008.000
NCL NCLM: 424/130.100

NCLS: 530/387.100; 435/326.000; 530/350.000; 800/008.000

L7 ANSWER 3 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2004:26071 USPATFULL
TITLE: Nucleic acid and corresponding protein entitled 213P1F11 useful in treatment and detection of cancer
INVENTOR(S): Challita-Eid, Pia M., Encino, CA, UNITED STATES
Raitano, Arthur B., Los Angeles, CA, UNITED STATES
Faris, Mary, Los Angeles, CA, UNITED STATES
Hubert, Rene S., Los Angeles, CA, UNITED STATES
Morrison, Robert Kendall, Santa Monica, CA, UNITED STATES
GE, Wangmao, Culver City, CA, UNITED STATES
Jakobovits, Aya, Beverly Hills, CA, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2004019915 | A1 | 20040129 | |
| APPLICATION INFO.: | US 2002-114432 | A1 | 20020401 | (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Kate H. Murashige, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130-2332
NUMBER OF CLAIMS: 51
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 60 Drawing Page(s)
LINE COUNT: 19089
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A novel gene (designated 213P1F11) and its encoded protein, and variants thereof, are described wherein 213P1F11 exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table I. Consequently, 213P1F11 provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 213P1F11 gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 213P1F11 can be used in active or passive immunization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 800/006.000
INCLS: 424/146.100; 530/388.260; 435/338.000
NCL NCLM: 800/006.000
NCLS: 424/146.100; 530/388.260; 435/338.000

L7 ANSWER 4 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2004:24351 USPATFULL
TITLE: Nucleic acid and corresponding protein entitled 121P2A3 useful in treatment and detection of cancer
INVENTOR(S): Challita-Eid, Pia M., Encino, CA, UNITED STATES
Raitano, Arthur B., Los Angeles, CA, UNITED STATES

Faris, Mary, Los Angeles, CA, UNITED STATES
Hubert, Rene S., Los Angeles, CA, UNITED STATES
Mitchell, Steve Chappell, Gurnee, IL, UNITED STATES
Afar, Daniel E. H., Brisbane, CA, UNITED STATES
Saffran, Douglas, Encinitas, CA, UNITED STATES
Morrison, Karen Jane Meyrick, Santa Monica, CA, UNITED STATES
Morrison, Robert Kendall, Santa Monica, CA, UNITED STATES
Ge, Wangmao, Culver City, CA, UNITED STATES
Jakobovits, Aya, Beverly Hills, CA, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2004018189 | A1 | 20040129 |
| APPLICATION INFO.: | US 2002-120835 | A1 | 20020409 (10) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 2001-300373P | 20010622 (60) |
| | US 2001-286630P | 20010425 (60) |
| | US 2001-282739P | 20010410 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Robert K. Cerpa, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130
NUMBER OF CLAIMS: 51
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 60 Drawing Page(s)
LINE COUNT: 19428
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A novel gene (designated 121P2A3) and its encoded protein, and variants thereof, are described wherein 121P2A3 exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table I. Consequently, 121P2A3 provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 121P2A3 gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 121P2A3 can be used in active or passive immunization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 424/130.100
INCLS: 800/006.000; 435/326.000; 530/388.100
NCL NCLM: 424/130.100
NCLS: 800/006.000; 435/326.000; 530/388.100

L7 ANSWER 5 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2004:20696 USPATFULL
TITLE: Nucleic acid and corresponding protein entitled 238P1B2 useful in treatment and detection of cancer
INVENTOR(S): Raitano, Arthur B., Los Angeles, CA, UNITED

STATES
Challita-Eid, Pia M., Encino, CA, UNITED STATES
Faris, Mary, Los Angeles, CA, UNITED STATES
Hubert, Rene S., Los Angeles, CA, UNITED STATES
Morrison, Robert Kendall, Santa Monica, CA, UNITED STATES
Ge, Wangmao, Culver City, CA, UNITED STATES
Jakobovits, Aya, Beverly Hills, CA, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2004016004 | A1 | 20040122 | |
| APPLICATION INFO.: | US 2002-114669 | A1 | 20020401 | (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Kate H. Murashige, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130
NUMBER OF CLAIMS: 50
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 54 Drawing Page(s)
LINE COUNT: 15841
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A novel gene (designated 238P1B2) and its encoded protein, and variants thereof, are described wherein 238P1B2 exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table I. Consequently, 238P1B2 provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 238P1B2 gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 238P1B2 can be used in active or passive immunization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 800/006.000
INCLS: 424/146.100; 530/388.260; 435/338.000
NCL NCLM: 800/006.000
NCLS: 424/146.100; 530/388.260; 435/338.000

L7 ANSWER 6 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2004:14288 USPATFULL
TITLE: Nucleic acid and corresponding protein entitled 162P1E6 useful in treatment and detection of cancer
INVENTOR(S): Challita-Eid, Pia M., Encino, CA, UNITED STATES
Raitano, Arthur B., Los Angeles, CA, UNITED STATES
Faris, Mary, Los Angeles, CA, UNITED STATES
Hubert, Rene S., Los Angeles, CA, UNITED STATES
Morrison, Karen Jane Meyrick, Santa Monica, CA, UNITED STATES
Morrison, Robert Kendall, Santa Monica, CA, UNITED STATES
Ge, Wangmao, Culver City, CA, UNITED STATES
Jakobovits, Aya, Beverly Hills, CA, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2004010811 | A1 | 20040115 |
| APPLICATION INFO.: | US 2002-121016 | A1 | 20020409 (10) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 2001-286630P | 20010425 (60) |
| | US 2001-283112P | 20010410 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Kate H. Murashige, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130
NUMBER OF CLAIMS: 51
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 86 Drawing Page(s)
LINE COUNT: 23445
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A novel gene (designated 162P1E6) and its encoded protein, and variants thereof, are described wherein 162P1E6 exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table I. Consequently, 162P1E6 provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 162P1E6 gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 162P1E6 can be used in active or passive immunization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 800/008.000
INCLS: 424/146.100; 514/044.000; 530/388.260; 435/338.000
NCL NCLM: 800/008.000
NCLS: 424/146.100; 514/044.000; 530/388.260; 435/338.000

L7 ANSWER 7 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2004:2426 USPATFULL
TITLE: METH1 and METH2 polynucleotides and polypeptides
INVENTOR(S): Iruela-Arispe, Luisa, Los Angeles, CA, UNITED STATES
Hastings, Gregg A., Westlake Village, CA, UNITED STATES
Ruben, Steven M., Olney, MD, UNITED STATES
Jonak, Zdenka L., Devon, PA, UNITED STATES
Trulli, Stephen H., Havertown, PA, UNITED STATES
Fornwald, James A., Norristown, PA, UNITED STATES
Terrett, Jonathan A., Oxfordshire, UNITED KINGDOM
PATENT ASSIGNEE(S): Human Genome Sciences, Inc. (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2004002449 | A1 | 20040101 |
| APPLICATION INFO.: | US 2001-989687 | A1 | 20011121 (9) |

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. WO 2000-US14462,

filed on 25 May 2000, PENDING
Continuation-in-part of Ser. No. US 1999-318208, filed on 25 May 1999, ABANDONED
Continuation-in-part of Ser. No. US 1999-373658, filed on 13 Aug 1999, PENDING

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1999-171503P | 19991222 (60) |
| | US 2000-183792P | 20000222 (60) |
| | US 1999-144882P | 19990720 (60) |
| | US 1999-147823P | 19990810 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: STERNE, KESSLER, GOLDSTEIN & FOX PLLC, 1100 NEW YORK AVENUE, N.W., SUITE 600, WASHINGTON, DC, 20005-3934
NUMBER OF CLAIMS: 4
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 11 Drawing Page(s)
LINE COUNT: 28864
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel anti-angiogenic proteins, related to thrombospondin. More specifically, isolated nucleic acid molecules are provided encoding human METH1 and METH2. METH1 and METH2 polypeptides are also provided, as are vectors, host cells and recombinant methods for producing the same. Also provided are diagnostic methods for the prognosis of cancer and therapeutic methods for treating individuals in need of an increased amount of METH1 or METH2. Also provided are methods for inhibiting angiogenesis using METH1 or METH2.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 514/012.000
INCLS: 514/044.000
NCL NCLM: 514/012.000
NCLS: 514/044.000

L7 ANSWER 8 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2003:288225 USPATFULL
TITLE: Lawsonia intracellularis proteins, and related methods and materials
INVENTOR(S): Rosey, Everett L., Preston, CT, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003202983 | A1 | 20031030 |
| APPLICATION INFO.: | US 2003-449462 | A1 | 20030529 (10) |

RELATED APPLN. INFO.: Division of Ser. No. US 2000-689065, filed on 12 Oct 2000, GRANTED, Pat. No. US 6605696

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1999-160922P | 19991022 (60) |
| | US 1999-163858P | 19991105 (60) |

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KOHN & ASSOCIATES, PLLC, Suite 410, 30500 Northwestern Highway, Farmington Hills, MI, 48334
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 8 Drawing Page(s)
LINE COUNT: 3976
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotide molecules contain a nucleotide sequence that encodes a L. intracellularis HtrA, PonA, HypC, LysS, YcfW, ABC1, or Omp100 protein, a substantial portion of the sequences, or a homologous sequence. Related polypeptides, immunogenic compositions and assays are described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 424/190.100
INCLS: 424/200.100; 435/069.300; 435/320.100; 435/252.300; 530/350.000; 536/023.700
NCL NCLM: 424/190.100
NCLS: 424/200.100; 435/069.300; 435/320.100; 435/252.300; 530/350.000; 536/023.700

L7 ANSWER 9 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2003:225309 USPATFULL
TITLE: Lawsonia derived gene and related flge polypeptides, peptides and proteins and their uses
INVENTOR(S): Panaccio, Michael, Victoria, AUSTRALIA
Rosey, Everett Lee, Preston, CT, UNITED STATES
Sinistaj, Meri, Victoria, AUSTRALIA
Hasse, Detlef, Victoria, AUSTRALIA
Parsons, Jim, Victoria, AUSTRALIA
Ankenbauer, Robert Gerard, Pawcatuck, CT, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2003157120 | A1 | 20030821 | |
| APPLICATION INFO.: | US 2002-9823 | A1 | 20020813 | (10) |
| | WO 2001-AU437 | | 20010511 | |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1999-60133973 | 19990513 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614
NUMBER OF CLAIMS: 39
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 16 Drawing Page(s)
LINE COUNT: 2857
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates generally to therapeutic compositions for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by

Lawsonia intracellularis or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from Lawsonia intracellularis which encodes an immunogenic FlgE peptide, polypeptide or protein that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against Lawsonia intracellularis and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting Lawsonia intracellularis or similar or otherwise related microorganisms.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 424/190.100
INCLS: 530/350.000; 530/388.500; 435/007.320; 536/023.200; 435/006.000
NCL NCLM: 424/190.100
NCLS: 530/350.000; 530/388.500; 435/007.320; 536/023.200; 435/006.000

L7 ANSWER 10 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2003:216219 USPATFULL
TITLE: Lawsonia intracellularis proteins, and related methods and materials
INVENTOR(S): Rosey, Everett L., Preston, CT, United States
PATENT ASSIGNEE(S): Pfizer, Inc., New York, NY, United States (U.S. corporation)
Pfizer Products, Inc., Groton, CT, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 6605696 | B1 | 20030812 | |
| APPLICATION INFO.: | US 2000-689065 | | 20001012 | (9) |

| | NUMBER | DATE | |
|---|---|---|---|
| PRIORITY INFORMATION: | US 1999-160922P | 19991022 | (60) |
| | US 1999-163868P | 19991105 | (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Smith, Lynette R. F.
ASSISTANT EXAMINER: Ford, Vanessa L
LEGAL REPRESENTATIVE: Ginsburg, Paul H., Ling, Lorraine B., Kohn & Associates, PLLC
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 9 Drawing Figure(s); 8 Drawing Page(s)
LINE COUNT: 3846
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotide molecules contain a nucleotide sequence that encodes a L. intracellularis HtrA, PonA, HypC, LysS, YcfW, ABC1, or Omp100 protein, a substantial portion of the sequences, or a homologous sequence. Related polypeptides, immunogenic compositions and assays are described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 530/300.000
INCLS: 424/190.100; 424/192.100; 424/193.100; 424/243.100; 424/245.000; 424/252.100; 530/300.000; 530/324.000; 530/388.200
NCL NCLM: 530/300.000
NCLS: 424/190.100; 424/192.100; 424/193.100; 424/243.100; 424/245.100; 424/252.100; 530/324.000; 530/388.200

L7 ANSWER 11 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2003:152333 USPATFULL
TITLE: Novel therapeutic compositions for treating infection by Lawsonia spp.
INVENTOR(S): Rosey, Everett Lee, Preston, CT, UNITED STATES
King, Kendall Wayne, Waterford, CT, UNITED STATES
Good, Robert Trygve, Romsey, AUSTRALIA
Strugnell, Richard Anthony, Hawthorn, AUSTRALIA

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003103999 | A1 | 20030605 |
| APPLICATION INFO.: | US 2001-10160 | A1 | 20011109 (10) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | AU 2000-1381 | 20001120 |
| | US 2000-249595P | 20001117 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614
NUMBER OF CLAIMS: 50
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 4819
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates generally to therapeutic compositions for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by Lawsonia intracellularis or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from Lawsonia intracellularis, which encodes an immunogenic polypeptide that is particularly useful as an antigen in a vaccine preparation for conferring humoral immunity against Lawsonia intracellularis and related pathogens in animal hosts, wherein said polypeptide is selected from the group consisting of flhB, fliR, ntrC, glnH, motA, motB, tlyC, ytfM, and ytfN polypeptides, or a homologue, analogue or derivative of any one or more of said polypeptides. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting Lawsonia intracellularis or similar or otherwise related microorganisms.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 424/190.100

INCLS: 530/350.000; 435/069.300; 435/252.300; 435/320.100; 536/023.200
NCL NCLM: 424/190.100
NCLS: 530/350.000; 435/069.300; 435/252.300; 435/320.100; 536/023.200

L7 ANSWER 12 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2003:29860 USPATFULL
TITLE: Lawsonia intracellularis proteins, and related methods and materials
INVENTOR(S): Rosey, Everett L., Preston, CT, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003021802 | A1 | 20030130 |
| APPLICATION INFO.: | US 2002-210296 | A1 | 20020801 (10) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 2000-689065, filed on 12 Oct 2000, PENDING

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1999-160922P | 19991022 (60) |
| | US 1999-163858P | 19991105 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KOHN & ASSOCIATES, PLLC, SUITE 410, 30500 NORTHWESTERN HWY., FARMINGTON HILLS, MI, 48334
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 8 Drawing Page(s)
LINE COUNT: 3947
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotide molecules contain a nucleotide sequence that encodes a L. intracellularis HtrA, PonA, HypC, LysS, YcfW, ABC1, or Omp100 protein, a substantial portion of the sequences, or a homologous sequence. Related polypeptides, immunogenic compositions and assays are described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 424/190.100
INCLS: 435/219.000; 435/320.100; 435/252.300; 536/023.200; 435/069.300
NCL NCLM: 424/190.100
NCLS: 435/219.000; 435/320.100; 435/252.300; 536/023.200; 435/069.300

L7 ANSWER 13 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2000:149713 USPATFULL
TITLE: Methods for modulating T cell survival by modulating bcl-X.sub.L protein level
INVENTOR(S): June, Carl H., 7 Harlow Ct., Rockville, MD, United States 20850
Thompson, Craig B., 1375 E. 57th St., Chicago, IL, United States 60637

| | NUMBER | KIND | DATE |
|---|---|---|---|

| | | |
|---|---|---|
| PATENT INFORMATION: | US 6143291 | 20001107 |
| APPLICATION INFO.: | US 1995-481739 | 19950607 (8) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1995-435518, filed on 4 May 1995, now abandoned | |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | Granted | |
| PRIMARY EXAMINER: | Hauda, Karen M. | |
| LEGAL REPRESENTATIVE: | Lahive & Cockfield, LLP | |
| NUMBER OF CLAIMS: | 5 | |
| EXEMPLARY CLAIM: | 1,3 | |
| NUMBER OF DRAWINGS: | 21 Drawing Figure(s); 13 Drawing Page(s) | |
| LINE COUNT: | 2507 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods for protecting a T cell from cell death are described. The methods involve contacting the T cell with an agent which augments the bcl-X.sub.L protein level in the T cell such that it is protected from cell death. The invention further pertains to methods for increasing the susceptibility of a T cell to cell death, comprising contacting the T cell with at least one agent which decreases bcl-X.sub.L protein level in the T cell. Both in vivo and in vitro methods are described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/093.210
INCLS: 435/375.000; 435/320.100; 435/172.300
NCL NCLM: 424/093.210
NCLS: 435/320.100; 435/375.000; 435/455.000

(FILE 'MEDLINE' ENTERED AT 15:32:18 ON 12 JUL 2004)

L8 41 SEA FILE=MEDLINE ABB=ON PLU=ON "LAWSONIA BACTERIA"/CT
L9 61527 SEA FILE=MEDLINE ABB=ON PLU=ON ANTIBODIES/CT
L10 0 SEA FILE=MEDLINE ABB=ON PLU=ON L8 AND L9

L8 41 SEA FILE=MEDLINE ABB=ON PLU=ON "LAWSONIA BACTERIA"/CT
L11 4966 SEA FILE=MEDLINE ABB=ON PLU=ON HEMOLYSINS/CT
L12 0 SEA FILE=MEDLINE ABB=ON PLU=ON L8 AND L11

FILE 'CAPLUS' ENTERED AT 15:34:04 ON 12 JUL 2004

L13 2 SEA ABB=ON PLU=ON PALK12 OR (P ALK OR PALK)(W)12 OR P ALK12
L14 0 SEA ABB=ON PLU=ON (ATCC OR CULTUR?)(S)207195
L15 2 SEA ABB=ON PLU=ON L13 NOT L3

L15 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN

| | |
|---|---|
| ED Entered STN: | 14 Dec 1991 |
| ACCESSION NUMBER: | 1991:649596 CAPLUS |
| DOCUMENT NUMBER: | 115:249596 |
| TITLE: | Construction of new α-galactosidase producing yeast strains and their industrial applications |
| INVENTOR(S): | Liljestrom, Pirkko L.; Tubb, Roy S.; Korhola, Matti P. |
| PATENT ASSIGNEE(S): | Alko Ltd., Finland |
| SOURCE: | U.S., 19 pp. |

CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 5055401 | A | 19911008 | US 1987-36649 | 19870410 |

PRIORITY APPLN. INFO.: US 1987-36649 19870410

AB Bakers' or brewer's yeast with α-galactosidase activity are produced by transformation with a cloned gene. These transformants can utilize the raffinose found in the commonly used feedstock, molasses, leading to increased fermentation efficiency and lower BOD of the process effluent. Bakers' yeast containing the MEL1 gene of Saccharomyces cerevisiae uvarum integrated into the genome or on an autonomously replicating plasmid were prepared The biomass accumulation in cultures containing MEL1+ yeast was greater than that for cultures containing a control bakers' yeast when molasses was used as feedstock.

L15 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 05 Mar 1988
ACCESSION NUMBER: 1988:70176 CAPLUS
DOCUMENT NUMBER: 108:70176
TITLE: Construction of new α-galactosidase-producing yeast strains and the industrial application of these strains
INVENTOR(S): Liljestrom, Pirkko Liisa; Tubb, Roy Stephen; Korhola, Matti Pellervo
PATENT ASSIGNEE(S): Osakeyhtio Alko AB, Finland
SOURCE: Eur. Pat. Appl., 25 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| EP 241044 | A2 | 19871014 | EP 1987-105332 | 19870410 |
| EP 241044 | A3 | 19890524 | | |
| EP 241044 | B1 | 19970716 | | |
| R: AT, BE, CH, DE, FR, GB, LI, NL, SE | | | | |
| DK 8701880 | A | 19871012 | DK 1987-1880 | 19870410 |
| FI 8701584 | A | 19871012 | FI 1987-1584 | 19870410 |
| FI 89724 | B | 19930730 | | |
| FI 89724 | C | 19931110 | | |
| NO 8701518 | A | 19871012 | NO 1987-1518 | 19870410 |
| CA 1334511 | A1 | 19950221 | CA 1987-534397 | 19870410 |
| AT 155529 | E | 19970815 | AT 1987-105332 | 19870410 |

PRIORITY APPLN. INFO.: FI 1986-1548 19860411

AB Baker's and brewer's yeast capable of utilizing raffinose in molasses are prepared by introducing the α-galactosidase gene into these microorganisms. In the absence of α-galactosidase, the raffinose is hydrolyzed to fructose and melibiose, but the

latter cannot be used for growth. In the presence of α-galactosidase, melibiose is hydrolyzed to glucose, and raffinose is hydrolyzed to sucrose, a substrate for the invertase already present. Recombinant baker's yeast M12E-2, containing a plasmid encoding α-galactosidase, and the parent strain were both grown on a molasses-containing medium under conditions close to mimic those of com. baker's yeast production After 10 h growth, 2200 units activity/1.8 L culture medium were found in the M12E-2 culture, and none in the parent culture. No melibiose was present in the M12E-2 culture medium, and considerably more biomass had been produced.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB' ENTERED AT 15:36:42 ON 12 JUL 2004)

L16 2 S L13
L17 1 S L14
L18 1 S (L16 OR L17) NOT L4

L18 ANSWER 1 OF 1 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-278319 [27] WPIDS
DOC. NO. CPI: C2003-072654
TITLE: Use of low molecular weight mammalian AP endonuclease inhibitors, and other compounds, for treating cancer, also e.g. chronic inflammatory disease.
DERWENT CLASS: B05
INVENTOR(S): HAMMONDS, T R; HICKSON, I D
PATENT ASSIGNEE(S): (CANC-N) CANCER RES TECHNOLOGY LTD
COUNTRY COUNT: 98
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 2003007955 | A2 | 20030130 | (200327)* | EN | 150 |

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| WO 2003007955 | A2 | WO 2002-GB3342 | 20020722 |

PRIORITY APPLN. INFO: US 2001-306679P 20010720
AN 2003-278319 [27] WPIDS
AB WO2003007955 A UPAB: 20030429
NOVELTY - Use of low molecular weight mammalian AP endonuclease inhibitors (A), and other compounds (I)-(VII), for treating cancer, is new.
DETAILED DESCRIPTION - Use of mammalian AP endonuclease

inhibitors (A), and compounds (I)-(VII) (some of which are not mammalian AP endonuclease inhibitors) for treating cancer, is new.
Ar1 = aryl;
Ar2 = phenyl or Het1;
Het1 = wholly or part-aromatic 5-14 membered heterocyclic containing 1 or more O, N or S;
X = bond, A-D or a group of formula (i) or (ii);
A1-A4 = bond or CH2;
n = 1-4;
R1, R2 = halo, NO2, CN, OR3, SR4, NR5R6, aryl, Het2, C(O)R7, C(R7a)=N-OR7b, C(R7a)=N-NHR7b, COOR8, CONR9R10, S(O)nR11 or Alk' optionally substituted by 1 or more halo, aryl, CN or NR5aR6a;
G = O or NRd;
Ra = aryl, Heta or Alk' optionally substituted by 1 or more halo, ORc, aryl or Hetb; or
CRaNRd = aromatic, partially or fully saturated 5-6 membered heterocyclic containing 1 N and optionally 1 or more O, S or N (optionally substituted by 1 or more Q or CORd');
Q = O, OH, halo, NO2, CN, Alk, aryl, NH2;
Alk = 1-6C alkyl;
Alk' = 1-12C alkyl;
Rc, Rd' = H, Alk or aryl;
Rb = halo, CN, NO2, SCN, Alk or NH2;
Rd = H, Alk', aryl or Hetc;
Heta-Hetc = 4-12 membered heterocyclic containing 1 or more N, O or S, and optionally substituted by 1 or more Q;
Re = COORg, CONRhRi or S(O)2NRhRi;
Rf = 1 or more 1-4C alkyl, 1-4C alkoxy or halo;
Rg = Alk;
Rh, Ri = H or Alk;
Rj, Rk = 1 or more 1-4C alkyl, 1-4C alkoxy, NO2, CN, halo or OC(O)-aryl;
L = bond or a group of formula (iii) or (iv);
t = 2-4;
Rm = H or 1-3C alkyl;
G1-G3 = bond, CH2 or CH2CH2;
E1, E2 = CH or N;
Rp = 1-4C alkyl, halo, CN, NO2, OH or SH;
p = 1-3;
Rq = Hetx or S-Alk;
HetX = aromatic or saturated 5-membered heterocycle containing 1 or more O, N or S (optionally substituted by 1 or more Q or thienyl);
Q = O, S or NH;
Rx = COORx' or CONRx''Rx''';
Ry = halo, NO2 or Alk;
Ry' = absent; or
CRyCRy' = fused benzene ring optionally substituted by at least 1 halo, NO2, Alk or 1-6C alkoxy;
R4 = H, Alk' (optionally substituted by 1 or more halo or aryl), aryl, Het3, or COR12a;
Rx'-Rx''' = H, Alk, aryl or Hetx';
Hetx' = 4-12 membered heterocyclic containing 1 or more N, O or S, and optionally substituted by 1 or more Q;
R3 = R4 or SO2-aryl;
R6 = H, Alk' (optionally substituted by 1 or more halo or

aryl), aryl, Het4, COR12b, CONR12cR12d, COOR12d or SO2aryl;
R5 = R6 or NCR5bR6b;
R5a-R7a, R5b, R6b = H or Alk; or
CR5bR6b = 5-10 membered mono- or bicyclic, fully saturated or partly aromatic, carbo- or heterocyclic system containing 1-3 O, N or S (optionally substituted by 1 or more halo, CN, O or Alk);
R7, R8 = H, Alk' (optionally substituted by 1 or more halo or aryl), aryl or Het5;
R7b = Alk, aryl, Het5, COR7c, COOR7d or CONR7eR7f;
R7c, R7d, R7f = Alk (optionally substituted by 1 or more halo, aryl or adamantyl), aryl or Het5;
R7e = H or R7c;
R9 = H, Alk' (optionally substituted by 1 or more halo or aryl), aryl, Het6 or NHCOR12e;
R11 = Alk' (optionally substituted by 1 or more halo or aryl), aryl or Het7;
n = 1-2;
R10, R12e = H, Alk (optionally substituted by 1 or more halo or aryl), aryl or Het8;
A = O, S, SO, S(O)2, NR13, CO, CHOH or CR13a;
D = bond, S(O)2, P(O)(OR14a)O, CO, CS, C(O)O, CONR15a, CH2CO, CONR15b, CH2CONHNHC(S)NH, COCR13cR13d, CONR15c, C(S)NR15d, C(S)NHN=CR13e, N=CR14b, NR15eNR15f, NR15gN=CR14c, NR15hNR15iCO, NR15jCONR15k, NR16CR17=N-, NNHCONHN=CR13f, N-O, N-OC(O), N-OC(O)O or N OC(O)NR13g;
R13 = R16 or Het8;
R13a-R13g = H or Alk;
R14a = Alk or aryl;
R14b, R14c, R16 = H, Alk or aryl; or
NR16CR17 = 4-7 membered heterocyclic optionally containing a further 1 or more N, O, or S, (optionally unsaturated and/or substituted by 1 or more OH, halo, CN, NO2, 1-4C alkyl, 1-4C alkoxy, =CR18R19 or spiro-(CH2)p);
R15a-R15k = H, Alk, aryl or Het10;
R17 = H, CR20aR20bR20c, OR20d, SR20e or NR20fR20g;
R18, R19 = H, 1-4C alkyl or aryl;
p = 3-6;
R20d-R20g = Alk, aryl or Het11;
R20a-R20c = H, Alk, aryl or Het11;
Het2-Het11 = 4-12 membered heterocyclic containing 1 or more O, N or S, (optionally substituted by 1 or more O, OR21a, S(O)qR21b, CN, halo, NO2, Alk, aryl, NR21cR21d, -COR21e, COOR21f, CONR21gR21h, -NR21iCOR21j, NR21kCONR21mR21n or NR21oS(O)2R21p;
R21a-R21p = H, Alk or aryl; and
q = 0-2;
provided that:
(i) R21b is not H when q = 1-2;
(ii) when A = O, then D = bond, S(O)2, P(O)(OR14a)O, C(O), C(S), C(O)O, C(O)NR15a or CH2C(O);
(iii) when A = S, then D = bond, C(O), C(S), C(O)O, C(O)NR15b, CH2C(O)NHNHC(S)NH or CH2C(O);
(iv) when A = S(O) or S(O)2, then D = bond or CH2C(O);
(v) when A = NR13, then D = bond, NR13b, S(O)2, C(O), C(S), C(O)CR13cR13d, C(O)NR15c, C(S)NR15d, C(S)N(H)N=C(R13e), N=C(R14b) or CH2C(O);
(vi) when A = C(O), then D = bond, N(R15e)N(R15f),

N(R15g)N=C(R14c), N(R15h)N(R15i)C(O), N(R15j)C(O)N(R15k) or N(R16)C(R17)=N-;

(vii) when A = CH(OH), then D = bond; and

(viii) when A = C(R13a), then D = NN(H)C(O)N(H)N=C(R13f), N-O, N-OC(O), N-OC(O)O or N OC(O)N(R13g).

INDEPENDENT CLAIMS are also included for:

(1) compositions and therapeutic systems comprising a chemotherapeutic agent and (A) or (I)-(VI);

(2) use of (A) for treating conditions where inhibition of AP endonuclease is needed;

(3) use of (I)-(VI) for treating microbial disease;

(4) a method of detecting the mutagenic, cytostatic or cytotoxic nature of a compound by contacting test cells with AP endonuclease inhibitors and monitoring frequency of phenotypic change, cell proliferation or frequency of cell death; and

(5) a method of assessing ability of a compound to protect against DNA damage by contacting test cells with AP endonuclease inhibitors and known carcinogen, and monitoring frequency of DNA damage.

ACTIVITY - Cytostatic; Antiinflammatory; Antiulcer; Gastrointestinal; Virucide; Hepatotropic; Nootropic; Neuroprotective; Antibacterial.

MECHANISM OF ACTION - AP Endonuclease Inhibitor; HAP1 Inhibitor.

In tests to determine HAP1 inhibition, 6,8-dibromo-2-(1-methyl propenyl)-benzo(d)(1,3)oxazin-4-one displayed an IC50 9.8 micro M.

USE - For treating cancer. Mammalian AP endonuclease inhibitors may also be used to treat chronic inflammatory or oxyradical overload disease, e.g. ulcerative colitis, viral hepatitis, Wilson disease, hemochromatosis, chronic gastritis, chronic pancreatitis or Barret esophagus, or Alzheimer's disease. (I)-(VI) May also be used to treat microbial disease.

ADVANTAGE - Coadministration of (A) reduces amount of DNA damaging agent used in therapy, hence reducing cytotoxic side effects.

**Dwg.0/2**

FILE 'USPATFULL' ENTERED AT 15:37:56 ON 12 JUL 2004

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L19           4 S L13
L20           0 S L14
L21           4 S L19 NOT L7
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L21 ANSWER 1 OF 4 USPATFULL on STN

ACCESSION NUMBER: 2004:141091 USPATFULL

TITLE: Compound having tetrahydronaphthalene skeleton and liquid crystal composition containing same

INVENTOR(S): Kusumoto, Tetsuo, Kitaadachi-gun, JAPAN
Saito, Yoshitaka, Iwatsuki, JAPAN
Negishi, Makoto, Tokyo, JAPAN
Nagashima, Yutaka, Ageo, JAPAN
Takehara, Sadao, Sakura, JAPAN
Takatsu, Haruyoshi, Tokyo, JAPAN
Grahe, Gerwald, Berlin, GERMANY, FEDERAL REPUBLIC OF
Frings, Rainer Bruno, Berlin, GERMANY, FEDERAL REPUBLIC OF

| | |
|---|---|
| | Pithart, Cornelia, Berlin, GERMANY, FEDERAL REPUBLIC OF |
| PATENT ASSIGNEE(S): | Dainippon Ink and Chemicals, Inc., Tokyo, JAPAN (non-U.S. corporation) |

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 6746728 | B1 | 20040608 | |
| | WO 2001000548 | | 20010104 | |
| APPLICATION INFO.: | US 2001-926838 | | 20011228 | (9) |
| | WO 1999-JP4919 | | 19990910 | |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 1999-184786 | 19990630 |
| | JP 1999-191670 | 19990706 |

| | |
|---|---|
| DOCUMENT TYPE: | Utility |
| FILE SEGMENT: | GRANTED |
| PRIMARY EXAMINER: | Wu, Shean C. |
| LEGAL REPRESENTATIVE: | Armstrong, Kratz, Quintos, Hanson & Brooks, LLP |
| NUMBER OF CLAIMS: | 27 |
| EXEMPLARY CLAIM: | 1 |
| NUMBER OF DRAWINGS: | 0 Drawing Figure(s); 0 Drawing Page(s) |
| LINE COUNT: | 6030 |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A tetrahydronaphthalene derivative represented by the general formula (I) and a liquid crystal composition containing the same. ##STR1##

A compound represented by the general formula (I) shows superior liquid crystallinity and co-solubility with conventional liquid crystal compounds and compositions. Furthermore, addition of such a compound enables the threshold voltage to be significantly reduced with almost no deleterious effect on the responsiveness. In addition, a compound of the present invention can also be easily produced industrially, is colorless, and is chemically stable. Consequently, liquid crystal compositions containing such a compound are extremely useful as liquid crystals, and are particularly suitable for liquid crystal displays requiring a wide operating temperature range, low voltage driving and a high response speed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

| | | |
|---|---|---|
| INCL | INCLM: | 428/001.100 |
| | INCLS: | 252/299.620; 560/005.000; 560/006.000; 560/119.000; 570/129.000; 570/183.000; 570/187.000 |
| NCL | NCLM: | 428/001.100 |
| | NCLS: | 252/299.620; 560/005.000; 560/006.000; 560/119.000; 570/129.000; 570/183.000; 570/187.000 |

L21 ANSWER 2 OF 4 USPATFULL on STN

| | |
|---|---|
| ACCESSION NUMBER: | 2003:319257 USPATFULL |
| TITLE: | Novel spinosyn-producing polyketide synthases |
| INVENTOR(S): | Burns, Lesley S., Cambridge, UNITED KINGDOM<br>Graupner, Paul R., Carmel, IN, UNITED STATES<br>Lewer, Paul, Indianapolis, IN, UNITED STATES |

Martin, Christine J., Cambridge, UNITED KINGDOM
Vousden, William A., Dry Drayton, UNITED KINGDOM
Waldron, Clive, Indianapolis, IN, UNITED STATES
Wilkinson, Barrie, Sharnbrook, UNITED KINGDOM

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003225006 | A1 | 20031204 |
| APPLICATION INFO.: | US 2003-368770 | A1 | 20030219 (10) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 2002-358075P | 20020219 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: DOW AGROSCIENCES LLC, 9330 ZIONSVILLE RD, INDIANAPOLIS, IN, 46268
NUMBER OF CLAIMS: 23
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 13 Drawing Page(s)
LINE COUNT: 2875
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides, biologically active spinosyns, hybrid spinosyn polyketide synthases capable of functioning in Saccharopolyspora spinosa to produce the spinosyns, and methods of controlling insects using the spinosyns.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 514/028.000
INCLS: 536/007.100
NCL NCLM: 514/028.000
NCLS: 536/007.100

L21 ANSWER 3 OF 4 USPATFULL on STN
ACCESSION NUMBER: 97:81137 USPATFULL
TITLE: Recombinant production of glucoamylase P in trichoderma
INVENTOR(S): Torkkeli, Tuula, Helsinki, Finland
Joutsjoki, Vesa, Helsinki, Finland
Torkkeli, Helena, Helsinki, Finland
Vainio, Arja, Helsinki, Finland
Fagerstrom, Richard, Espoo, Finland
Aho, Sirpa, Helsinki, Finland
Korhola, Matti, Helsinki, Finland
Nevalainen, Helena, North Epping, Australia
PATENT ASSIGNEE(S): Alko-Yhiot Oy, Finland (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5665585 | | 19970909 |
| APPLICATION INFO.: | US 1995-385370 | | 19950207 (8) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 1993-104853, filed on 12 Aug 1993, now abandoned And a continuation-in-part of Ser. No. US 1992-937789, filed on 3 Sep 1992, now abandoned
DOCUMENT TYPE: Utility

FILE SEGMENT: Granted
PRIMARY EXAMINER: LeGuyader, John L.
LEGAL REPRESENTATIVE: Sterne, Kessler, Goldstein & Fox p.l.l.c.
NUMBER OF CLAIMS: 35
EXEMPLARY CLAIM: 26
NUMBER OF DRAWINGS: 26 Drawing Figure(s); 23 Drawing Page(s)
LINE COUNT: 3635
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention is directed to amino acid and DNA sequences of a unique glucoamylase P that has a high debranching activity, a Trichoderma host cell, transformed with such sequences, the expression of such recombinant glucoamylase P, and the industrial uses for the recombinant enzyme and hosts transformed therewith.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 435/203.000
INCLS: 435/069.100; 435/172.300; 435/183.000; 435/201.000; 435/210.000; 435/254.600; 435/256.800; 435/320.100; 536/023.100; 536/023.200; 536/023.740
NCL NCLM: 435/203.000
NCLS: 435/069.100; 435/183.000; 435/201.000; 435/210.000; 435/254.600; 435/256.800; 435/320.100; 536/023.100; 536/023.200; 536/023.740

L21 ANSWER 4 OF 4 USPATFULL on STN
ACCESSION NUMBER: 91:82149 USPATFULL
TITLE: Construction of new α-galactosidase producing yeast strains and the industrial application of these strains
INVENTOR(S): Liljestrom, Pirkko L., Vantaa, Finland
Tubb, Roy S., Deal, England
Korhola, Matti P., Helsinki, Finland
PATENT ASSIGNEE(S): Alko Ltd., Helsinki, Finland (non-U.S. corporation)

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 5055401 | | 19911008 | |
| APPLICATION INFO.: | US 1987-36649 | | 19870410 | (7) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Teskin, Robin L.
LEGAL REPRESENTATIVE: Sterne, Kessler, Goldstein & Fox
NUMBER OF CLAIMS: 33
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 10 Drawing Figure(s); 10 Drawing Page(s)
LINE COUNT: 837
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The objects of this invention are new Saccharomyces cerevisiae yeast strains into which α-galactosidase gene (MEL.sup.+) has been transferred by using recombinant DNA methods. Baker's and distiller's yeasts producing α-galactosidase, are utilizable in the corresponding industry, because they are able to utilize the raffinose present in molasses, which results in greater yield of yeast (or ethanol) and reduction or elimination of the costs associated with biological oxygen demand (B.O.D.) in the effluent

from factories. The improved ability of brewer's yeasts to produce α-galactosidase provides a sensitive method for monitoring pasteurization of beer.

The new yeast strains prepared by using recombinant DNA methods produce more α-galactosidase than naturally occurring α-galactosidase producing yeast strains.

Also methods for marking yeast strains and for producing stable transformants of yeasts are presented.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
INCL INCLM: 435/172.300
INCLS: 435/208.000; 435/254.000; 435/255.000; 435/256.000; 435/320.100; 435/100.000; 435/105.000; 435/091.000; 536/027.000; 935/027.000; 935/028.000; 935/037.000; 935/056.000; 935/069.000; 935/078.000; 935/082.000
NCL NCLM: 435/091.410
NCLS: 435/100.000; 435/105.000; 435/208.000; 435/254.210; 435/320.100; 435/483.000; 536/023.200

FILE 'CAPLUS' ENTERED AT 15:38:29 ON 12 JUL 2004
L22 5 S L1 AND (HEMOLYSIN OR HAEMOLYSIN)
L23 0 S L22 NOT (L3 OR L15)

FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB' ENTERED AT 15:39:09 ON 12 JUL 2004
L24 6 S L22
L25 0 S L24 NOT (L4 OR L18)

FILE 'USPATFULL' ENTERED AT 15:39:50 ON 12 JUL 2004
L26 2 S L1(S)(HEMOLYSIN OR HAEMOLYSIN)
L27 0 S L26 NOT (L7 OR L21)

(FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB, USPATFULL' ENTERED AT 15:40:33 ON 12 JUL 2004)
L28 185 S "PANACCIO M"?/AU — Author (S)
L29 138 S "ROSEY E"?/AU
L30 92 S "HASSE D"?/AU
L31 122 S "ANKENBAUER R"?/AU
L32 7 S L28 AND L29 AND L30 AND L31
L33 12 S L28 AND (L29 OR L30 OR L31)
L34 10 S L29 AND (L30 OR L31)
L35 7 S L30 AND L31
L36 508 S L28 OR L29 OR L30 OR L31
L37 34 S L36 AND L1
L38 36 S L32 OR L33 OR L34 OR L35 OR L37
L39 19 DUP REM L38 (17 DUPLICATES REMOVED)

L39 ANSWER 1 OF 19 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 1
ACCESSION NUMBER: 2004:257303 BIOSIS
DOCUMENT NUMBER: PREV200400257303
TITLE: Proteins from actinobacillus pleuropneumoniae.

AUTHOR(S): **Ankenbauer, Robert G.** [Inventor, Reprint Author]; Baarsch, Mary Jo [Inventor]; Campos, Manuel [Inventor]; Keich, Robin [Inventor]; **Rosey, Everett** [Inventor]; Suiter, Brian [Inventor]; Warren-Stewart, Lynn [Inventor]
CORPORATE SOURCE: Pawcatuck, CT, USA
ASSIGNEE: Pfizer Inc.; Pfizer Products Inc.
PATENT INFORMATION: US 6713071 March 30, 2004
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Mar 30 2004) Vol. 1280, No. 5. http://www.uspto.gov/web/menu/patdata.html. e-file.
ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 12 May 2004
Last Updated on STN: 12 May 2004

AB The present invention is directed to five novel, low molecular weight proteins from Actinobacillus pleuropneumoniae (APP), which are capable of inducing, or contributing to the induction of, a protective immune response in swine against APP. The present invention is further directed to polynucleotide molecules having nucleotide sequences that encode the proteins, as well as vaccines comprising the proteins or polynucleotide molecules, and methods of making and using the same.

L39 ANSWER 2 OF 19 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 2
ACCESSION NUMBER: 2003:434075 BIOSIS
DOCUMENT NUMBER: PREV200300434075
TITLE: **Lawsonia intracellularis** proteins, and related methods and materials.
AUTHOR(S): **Rosey, Everett L.** [Inventor, Reprint Author]
CORPORATE SOURCE: ASSIGNEE: Pfizer, Inc.; Pfizer Products, Inc.
PATENT INFORMATION: US 6605696 August 12, 2003
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Aug 12 2003) Vol. 1273, No. 2. http://www.uspto.gov/web/menu/patdata.html. e-file.
ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 17 Sep 2003
Last Updated on STN: 17 Sep 2003

AB Isolated polynucleotide molecules contain a nucleotide sequence that encodes a **L. intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1, or Omp100 protein, a substantial portion of the sequences, or a homologous sequence. Related polypeptides, immunogenic compositions and assays are described.

L39 ANSWER 3 OF 19 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN DUPLICATE 3
ACCESSION NUMBER: 2003-900619 [82] WPIDS
CROSS REFERENCE: 2003-416977 [39]; 2003-895290 [82]
DOC. NO. CPI: C2003-256050

TITLE: New isolated **Lawsonia intracellularis** polynucleotide and polypeptide, useful for the prevention and diagnosis of **Lawsonia** infections in susceptible animals, such as pigs.

DERWENT CLASS: B04 C06 D16

INVENTOR(S): **ROSEY, E L**

PATENT ASSIGNEE(S): (ROSE-I) ROSEY E L

COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 2003202983 | A1 | 20031030 | (200382)* | | 66 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 2003202983 | A1 Provisional | US 1999-160922P | 19991022 |
| | Provisional | US 1999-163858P | 19991105 |
| | Div ex | US 2000-689065 | 20001012 |
| | | US 2003-449462 | 20030529 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---|---|---|
| US 2003202983 | A1 Div ex | US 6605696 |

PRIORITY APPLN. INFO: US 2003-449462 20030529; US 1999-160922P 19991022; US 1999-163858P 19991105; US 2000-689065 20001012

AN 2003-900619 [82] WPIDS

CR 2003-416977 [39]; 2003-895290 [82]

AB US2003202983 A UPAB: 20031223

NOVELTY - A new isolated polynucleotide molecule (I) comprises:

(a) a sequence encoding **Lawsonia intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 protein;

(b) a sequence that is a substantial part of the encoding sequence of (a); or

(c) a sequence homologous to the sequences of (a) or (b).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a polynucleotide molecule comprising a nucleotide sequence greater than 20 nucleotides having promoter activity and found within a fully defined sequence of 5445 bp, given in the specification, from nucleotide 2691-2890, or its complement;

(2) a recombinant vector comprising (I);

(3) a transformed host cell comprising the vector of (2);

(4) a polypeptide produced by the transformed host cell of (3);

(5) a genetic construct comprising a polynucleotide molecule that can be used to alter a **Lawsonia** gene, comprising:

(a) polynucleotide molecule comprising a sequence that is

otherwise the same as a nucleotide sequence of a htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene, or its homolog, substantial portion, or mutations capable of altering the above mentioned genes; or

(b) a polynucleotide molecule comprising a sequence that naturally flanks in situ the ORF of the htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene, or its homolog, such that transformation of a **Lawsonia** cell with the genetic construct results in altering htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene;

(6) a transformed host cell comprising the genetic construct of (5);

(7) an isolated polypeptide comprising:

(a) a **Lawsonia intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 protein;

(b) homologs or substantial portions of (a);

(c) a fusion protein of the polypeptide in (a) or (b) fused to another protein or polypeptide; or

(d) an analog or derivative of the polypeptide in (a), (b) or (c);

(8) a substantially pure polypeptide comprising an epitope of HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 protein that is specifically reactive with anti-**Lawsonia** antibodies;

(9) an isolated polypeptide comprising the sequence encoded by (I);

(10) an isolated antibody that specifically reacts with **L. intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 protein;

(11) a live attenuated vaccine comprising the transformed cell of (6);

(12) a killed cell vaccine comprising transformed cells of (6) in killed form; and

(13) an immunogenic composition comprising (I) or the polypeptide of (7), in combination with a carrier.

ACTIVITY - Antibacterial. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The methods and compositions of the present invention are useful for the prevention and diagnosis of **L. intracellularis** infections in susceptible animals, such as pigs.

Dwg.0/9

L39 ANSWER 4 OF 19 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
DUPLICATE 4

| | |
|---|---|
| ACCESSION NUMBER: | 2003-416977 [39] WPIDS |
| CROSS REFERENCE: | 2003-895290 [82]; 2003-900619 [82] |
| DOC. NO. CPI: | C2003-110367 |
| TITLE: | New isolated **Lawsonia intracellularis** polynucleotide and polypeptide, useful for the prevention and diagnosis of **Lawsonia** infections in susceptible animals, such as pigs. |
| DERWENT CLASS: | B04 C06 D16 |
| INVENTOR(S): | **ROSEY, E L** |
| PATENT ASSIGNEE(S): | (ROSE-I) ROSEY E L |
| COUNTRY COUNT: | 1 |
| PATENT INFORMATION: | |

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 2003021802 | A1 | 20030130 | (200339)* | | 64 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 2003021802 | A1 Provisional | US 1999-160922P | 19991022 |
| | Provisional | US 1999-163858P | 19991105 |
| | Cont of | US 2000-689065 | 20001012 |
| | | US 2002-210296 | 20020801 |

PRIORITY APPLN. INFO: US 2002-210296 20020801; US 1999-160922P 19991022; US 1999-163858P 19991105; US 2000-689065 20001012

AN 2003-416977 [39] WPIDS

CR 2003-895290 [82]; 2003-900619 [82]

AB US2003021802 A UPAB: 20031223

NOVELTY - A new isolated polynucleotide molecule (I) comprises:

(a) a sequence encoding **Lawsonia intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 protein;

(b) a sequence that is a substantial part of the encoding sequence of (a); or

(c) a sequence homologous to the sequences of (a) or (b).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a polynucleotide molecule comprising a nucleotide sequence greater than 20 nucleotides having promoter activity and found within a fully defined sequence of 5445 bp, given in the specification, from nucleotide 2691-2890, or its complement;

(2) a recombinant vector comprising (I);

(3) a transformed host cell comprising the vector of (2);

(4) a polypeptide produced by the transformed host cell of (3);

(5) a genetic construct comprising a polynucleotide molecule that can be used to alter a **Lawsonia** gene, comprising: (a) polynucleotide molecule comprising a sequence that is otherwise the same as a nucleotide sequence of a htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene, or its homolog, substantial portion, or mutations capable of altering the above mentioned genes; or (b) a polynucleotide molecule comprising a sequence that naturally flanks in situ the ORF of the htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 gene, or its homolog;

(6) a transformed host cell comprising the genetic construct of (5);

(7) an isolated polypeptide comprising: (a) a **Lawsonia intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 protein; (b) homologs or substantial portions of (a); (c) a fusion protein of the polypeptide in (a) or (b) fused to another protein or polypeptide; or (d) an analog or derivative of the polypeptide in (a), (b) or (c);

(8) a substantially pure polypeptide comprising an epitope of

HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 protein that is specifically reactive with anti-**Lawsonia** antibodies;

(9) an isolated polypeptide comprising the sequence encoded by (I);

(10) an isolated antibody that specifically reacts with **L. intracellularis** HtrA, PonA, HypC, LysS, YcfW, ABC1 or Omp100 protein;

(11) a live attenuated vaccine comprising the transformed cell of (6);

(12) a killed cell vaccine comprising transformed cells of (6) in killed form; and

(13) an immunogenic composition comprising (I) or the polypeptide of (7), in combination with a carrier.

ACTIVITY - Antibacterial. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The methods and compositions of the present invention are useful for the prevention and diagnosis of **L. intracellularis** infections in susceptible animals, such as pigs.

Dwg.0/9

L39 ANSWER 5 OF 19 USPATFULL on STN

ACCESSION NUMBER: 2003:225309 USPATFULL

TITLE: **Lawsonia** derived gene and related flge polypeptides, peptides and proteins and their uses

INVENTOR(S): **Panaccio, Michael**, Victoria, AUSTRALIA
**Rosey, Everett Lee**, Preston, CT, UNITED STATES
Sinistaj, Meri, Victoria, AUSTRALIA
**Hasse, Detlef**, Victoria, AUSTRALIA
Parsons, Jim, Victoria, AUSTRALIA
**Ankenbauer, Robert Gerard**, Pawcatuck, CT, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2003157120 | A1 | 20030821 | |
| APPLICATION INFO.: | US 2002-9823 | A1 | 20020813 | (10) |
| | WO 2001-AU437 | | 20010511 | |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1999-60133973 | 19990513 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614
NUMBER OF CLAIMS: 39
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 16 Drawing Page(s)
LINE COUNT: 2857
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates generally to therapeutic compositions for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by

**Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic FlgE peptide, polypeptide or protein that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 6 OF 19 USPATFULL on STN

| | |
|---|---|
| ACCESSION NUMBER: | 2003:152333 USPATFULL |
| TITLE: | Novel therapeutic compositions for treating infection by **Lawsonia** spp. |
| INVENTOR(S): | **Rosey, Everett Lee**, Preston, CT, UNITED STATES<br>King, Kendall Wayne, Waterford, CT, UNITED STATES<br>Good, Robert Trygve, Romsey, AUSTRALIA<br>Strugnell, Richard Anthony, Hawthorn, AUSTRALIA |

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2003103999 | A1 | 20030605 | |
| APPLICATION INFO.: | US 2001-10160 | A1 | 20011109 | (10) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | AU 2000-1381 | 20001120 |
| | US 2000-249595P | 20001117 (60) |

| | |
|---|---|
| DOCUMENT TYPE: | Utility |
| FILE SEGMENT: | APPLICATION |
| LEGAL REPRESENTATIVE: | KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614 |
| NUMBER OF CLAIMS: | 50 |
| EXEMPLARY CLAIM: | 1 |
| NUMBER OF DRAWINGS: | 1 Drawing Page(s) |
| LINE COUNT: | 4819 |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates generally to therapeutic compositions for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis**, which encodes an immunogenic polypeptide that is particularly useful as an antigen in a vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts, wherein said polypeptide is selected from the group consisting of flhB, fliR, ntrC, glnH, motA, motB, tlyC, ytfM, and ytfN polypeptides, or a homologue, analogue or derivative of any one or

more of said polypeptides. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L39 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 2002:368499 CAPLUS
DOCUMENT NUMBER: 136:382847
TITLE: Genes for antigenic proteins of **Lawsonia** and their use diagnosis and prophylaxis of **Lawsonia** infection
INVENTOR(S): **Rosey, Everett Lee**; King, Kendall Wayne; Good, Robert Trygve; Strugnell, Richard Anthony
PATENT ASSIGNEE(S): Agriculture Victoria Services Pty. Ltd., Australia; Australian Pork Limited; Pfizer Products, Inc.
SOURCE: PCT Int. Appl., 155 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2002038594 | A1 | 20020516 | WO 2001-AU1462 | 20011109 |
| WO 2002038594 | C2 | 20021107 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 2002014810 | A5 | 20020521 | AU 2002-14810 | 20011109 |
| US 2003103999 | A1 | 20030605 | US 2001-10160 | 20011109 |
| BR 2001014835 | A | 20030701 | BR 2001-14835 | 20011109 |
| EP 1332154 | A1 | 20030806 | EP 2001-983297 | 20011109 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| JP 2004512851 | T2 | 20040430 | JP 2002-541925 | 20011109 |

PRIORITY APPLN. INFO.:
AU 2000-1381 A 20001110
US 2000-249596P P 20001117
WO 2001-AU1462 W 20011109

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related

microorganisms. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis**, which encodes an immunogenic polypeptide that is particularly useful as an antigen in a vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts, wherein said polypeptide is selected from the group consisting of flhB, fliR, ntrC, glnH, motA, motB, tlyC, ytfM, and ytfN polypeptides, or a homolog, analog or derivative of any one or more of said polypeptides. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:297553 CAPLUS
DOCUMENT NUMBER: 134:321599
TITLE: Cloning of **Lawsonia** genes htrA, ponA, hypC, lysS, ycfW, abc1, and omp100, their encoded proteins or peptides and therapeutic use in diagnosis and as vaccine
INVENTOR(S): **Rosey, Everett Lee**
PATENT ASSIGNEE(S): Pfizer Products Inc., USA
SOURCE: Eur. Pat. Appl., 80 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| EP 1094070 | A2 | 20010425 | EP 2000-309125 | 20001017 |
| EP 1094070 | A3 | 20020109 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| US 6605696 | B1 | 20030812 | US 2000-689065 | 20001012 |
| JP 2001169787 | A2 | 20010626 | JP 2000-320736 | 20001020 |
| US 2003021802 | A1 | 20030130 | US 2002-210296 | 20020801 |
| US 2003202983 | A1 | 20031030 | US 2003-449462 | 20030529 |

PRIORITY APPLN. INFO.: US 1999-160922P P 19991022
US 1999-163858P P 19991105
US 2000-689065 A1 20001012

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in pigs or other animals caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism, such as porcine proliferative enteropathy (PPE). In particular, the present invention provides novel genes htrA, ponA, hypC, lysS, ycfW, abc1, and omp100 derived from **Lawsonia intracellularis** genomic regions A and B. These genes encode sequence homologs to lysyl-tRNA synthetase (gene lysS),

transmembrane or integral membrane protein (abc1), hydrogenase maturation protein (hypC), penicillin binding protein (ponA), and periplasmic serine protease protein (htrA) resp. The invention also relates to constructing these gene expression vector to produce recombinant protein using E. coli. Methods of expressing recombinant htrA and omp100 proteins in E. coli are also provided. The invention also provides the immunogenic peptides or proteins encoded by these genes that are particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

L39 ANSWER 9 OF 19 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-592540 [67] WPIDS
CROSS REFERENCE: 2003-895290 [82]
DOC. NO. NON-CPI: N2001-441503
DOC. NO. CPI: C2001-175788
TITLE: **Lawsonia intracellularis** polynucleotide and encoded protein, used to prevent **Lawsonia intracellularis** infection.
DERWENT CLASS: B04 C06 D16 S03
INVENTOR(S): **ROSEY, E L**
PATENT ASSIGNEE(S): (PFIZ) PFIZER PROD INC
COUNTRY COUNT: 26
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| JP 2001169787 | A | 20010626 | (200167)* | | 67 |
| EP 1094070 | A2 | 20010425 | (200167) | EN | |

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| JP 2001169787 | A | JP 2000-320736 | 20001020 |
| EP 1094070 | A2 | EP 2000-309125 | 20001017 |

PRIORITY APPLN. INFO: US 1999-160922P 19991022
AN 2001-592540 [67] WPIDS
CR 2003-895290 [82]
AB JP2001169787 A UPAB: 20031223
NOVELTY - An isolated polynucleotide molecule containing a nucleotide sequence encoding HtrA, PonA, HypC, LysS, YefW, ABC1 or Omp100 protein of **Lawsonia intracellularis**, or it's fragment or homolog, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) polynucleotide molecule containing more than 20 nucleotides having promotor activity and being found in nucleotides 2691-2890 of a 5445 nucleotide sequence, fully defined in the specification, or its complement;

(2) a recombinant vector containing the polynucleotide of (1);

(3) a transformed host cell transformed containing the novel vector;

(4) a polypeptide produced by the cell of (3);

(5) a gene construct containing a polynucleotide molecule which can be used for changing **Lawsonia** gene;

(6) a transformed cell containing the construct of (5);

(7) an isolated polypeptide produced by the cell of (6);

(8) an attenuated live vaccine containing the transformed cell of (6);

(9) a killed vaccine containing the cell of (6) in dead form; and

(10) an immunogenic composition containing an immunologically effective amount of the polypeptide of (3), and a carrier.

ACTIVITY - Antibacterial.

No biological data is given.

MECHANISM OF ACTION - Vaccine.

USE - The composition is useful for the prevention of **Lawsonia intracellularis** infection.

Dwg.0/9

L39 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 6

ACCESSION NUMBER: 2000:824297 CAPLUS

DOCUMENT NUMBER: 134:1364

TITLE: **Lawsonia**-derived gene tlyA and related hemolysin polypeptides, peptides and proteins and their uses for diagnosis and treatment of avian and porcine infections

INVENTOR(S): **Panaccio, Michael; Rosey, Everett Lee; Hasse, Detlef; Ankenbauer, Robert Gerard**

PATENT ASSIGNEE(S): Pfizer Products Inc, USA; Agriculture Victoria Services Pty Ltd; Pig Research and Development Corporation

SOURCE: PCT Int. Appl., 86 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000069906 | A1 | 20001123 | WO 2000-AU439 | 20000511 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF,

BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1177213 A1 20020206 EP 2000-924978 20000511
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
NZ 515363 A 20030725 NZ 2000-515363 20000511
PRIORITY APPLN. INFO.: US 1999-134022P P 19990513
WO 2000-AU439 W 20000511

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic TylA hemolysin peptide, polypeptide or protein that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 11 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 7
ACCESSION NUMBER: 2000:824296 CAPLUS
DOCUMENT NUMBER: 134:14022
TITLE: **Lawsonia**-derived gene ompH and related outer membrane protein H polypeptides, peptides and proteins and their uses for diagnosis and treatment of avian and porcine infections
INVENTOR(S): **Hasse, Detlef; Panaccio, Michael**; Sinistaj, Meri
PATENT ASSIGNEE(S): Pig Research and Development Corporation, Australia; Agriculture Victoria Services Pty Ltd
SOURCE: PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000069905 | A1 | 20001123 | WO 2000-AU438 | 20000511 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1183268 A1 20020306 EP 2000-924977 20000511
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
BR 2000011290 A 20020521 BR 2000-11290 20000511
NZ 515330 A 20030429 NZ 2000-515330 20000511
JP 2003521881 T2 20030722 JP 2000-618321 20000511
AU 767390 B2 20031106 AU 2000-43860 20000511
PRIORITY APPLN. INFO.: US 1999-133986P P 19990513
WO 2000-AU438 W 20000511

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic OmpH outer membrane peptide, polypeptide or protein that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 8
ACCESSION NUMBER: 2000:824295 CAPLUS
DOCUMENT NUMBER: 133:359825
TITLE: **Lawsonia**-derived gene flgE and related flagellar hook polypeptides, peptides and proteins and their uses for diagnosis and treatment of avian and porcine infections
INVENTOR(S): **Panaccio, Michael; Rosey, Everett Lee**; Sinistaj, Meri; **Hasse, Detlef**; Parsons, Jim; **Ankenbauer, Robert Gerard**
PATENT ASSIGNEE(S): Pfizer Products Inc., USA; Agriculture Victoria Services Pty Ltd; Pig Research and Development Corporation
SOURCE: PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000069904 | A1 | 20001123 | WO 2000-AU437 | 20000511 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT,

RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

| | | | | |
|---|---|---|---|---|
| BR 2000011294 | A | 20020226 | BR 2000-11294 | 20000511 |
| EP 1181315 | A1 | 20020227 | EP 2000-924976 | 20000511 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2003516113 | T2 | 20030513 | JP 2000-618320 | 20000511 |
| NZ 515331 | A | 20030725 | NZ 2000-515331 | 20000511 |
| AU 771376 | B2 | 20040318 | AU 2000-43859 | 20000511 |
| US 2003157120 | A1 | 20030821 | US 2002-9823 | 20020813 |

PRIORITY APPLN. INFO.: US 1999-133973P P 19990513
WO 2000-AU437 W 20000511

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic FlgE flagellar hook peptide, polypeptide or protein that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 9
ACCESSION NUMBER: 2000:824294 CAPLUS
DOCUMENT NUMBER: 133:359824
TITLE: **Lawsonia**-derived gene sodC and related superoxide dismutase polypeptides, peptides and proteins and their uses for diagnosis and treatment of avian and porcine infections
INVENTOR(S): **Ankenbauer, Robert Gerard; Hasse, Detlef; Panaccio, Michael; Rosey, Everett Lee;** Wright, Catherine
PATENT ASSIGNEE(S): Pfizer Products, Inc., USA; Pig Research and Development Corp.; Agriculture Victoria Services Pty., Ltd.
SOURCE: PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|

WO 2000069903 A1 20001123 WO 2000-AU436 20000511
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1177212 A1 20020206 EP 2000-924975 20000511
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
BR 2000011292 A 20020226 BR 2000-11292 20000511
JP 2003501013 T2 20030114 JP 2000-618319 20000511
NZ 515332 A 20040130 NZ 2000-515332 20000511
PRIORITY APPLN. INFO.: US 1999-133989P P 19990513
WO 2000-AU436 W 20000511

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. In particular, the present invention provides a novel gene derived from **Lawsonia intracellularis** which encodes an immunogenic SodC superoxide dismutase peptide, polypeptide or protein that is particularly useful as an antigen in vaccine preparation for conferring humoral immunity against **Lawsonia intracellularis** and related pathogens in animal hosts. The present invention is also directed to methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganisms.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 14 OF 19 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2000-320438 [28] WPIDS
DOC. NO. NON-CPI: N2000-240555
DOC. NO. CPI: C2000-097319
TITLE: Low molecular weight Actinobacillus pleuropneumoniae proteins and DNA encoding them, for use as vaccines against the bacteria in swine.
DERWENT CLASS: B04 C06 D16 S03
INVENTOR(S): **ANKENBAUER, R G**; BAARSCH, M J; CAMPOS, M; KEICH, R L; **ROSEY, E L**; STEWART, L M W; SUITER, B T; WARREN, S L M; WARREN-STEWART, L M; KEICH, R; **ROSEY, E**; SUITER, B; WARREN-STEWART, L
PATENT ASSIGNEE(S): (PFIZ) PFIZER PROD INC; (PFIZ) PFIZER INC
COUNTRY COUNT: 34
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| EP 1001025 | A2 | 20000517 | (200028)* | EN | 81 |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI | | | | | |
| JP 2000125889 | A | 20000509 | (200032) | | 72 |
| AU 9955987 | A | 20000608 | (200035) | | |
| CA 2285749 | A1 | 20000422 | (200037) | EN | |
| NZ 500540 | A | 20000825 | (200049) | | |
| CN 1259522 | A | 20000712 | (200054) | | |
| BR 9905111 | A | 20010320 | (200123) | | |
| MX 9909688 | A1 | 20000601 | (200133) | | |
| ZA 9906648 | A | 20010627 | (200140) | | 111 |
| JP 2003047489 | A | 20030218 | (200323) | | 71 |
| JP 3440221 | B2 | 20030825 | (200357) | | 69 |
| AU 767421 | B | 20031106 | (200401) | | |
| JP 2004041219 | A | 20040212 | (200413) | | 64 |
| US 6713071 | B1 | 20040330 | (200423) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| EP 1001025 | A2 | EP 1999-308262 | 19991020 |
| JP 2000125889 | A | JP 1999-301672 | 19991022 |
| AU 9955987 | A | AU 1999-55987 | 19991021 |
| CA 2285749 | A1 | CA 1999-2285749 | 19991020 |
| NZ 500540 | A | NZ 1999-500540 | 19991021 |
| CN 1259522 | A | CN 1999-125454 | 19991022 |
| BR 9905111 | A | BR 1999-5111 | 19991022 |
| MX 9909688 | A1 | MX 1999-9688 | 19991021 |
| ZA 9906648 | A | ZA 1999-6648 | 19991021 |
| JP 2003047489 | A Div ex | JP 1999-301672 | 19991022 |
| | | JP 2002-153105 | 19991022 |
| JP 3440221 | B2 | JP 1999-301672 | 19991022 |
| AU 767421 | B | AU 1999-55987 | 19991021 |
| JP 2004041219 | A Div ex | JP 2002-153105 | 19991022 |
| | | JP 2003-299144 | 20030822 |
| US 6713071 | B1 Provisional | US 1998-105285P | 19981022 |
| | | US 1999-418980 | 19991014 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---|---|---|
| JP 3440221 | B2 Previous Publ. | JP 2000125889 |
| AU 767421 | B Previous Publ. | AU 9955987 |

PRIORITY APPLN. INFO: US 1998-105285P 19981022; US 1999-418980 19991014

AN 2000-320438 [28] WPIDS

AB EP 1001025 A UPAB: 20000613

NOVELTY - A substantially purified protein (I), comprising about residues 20-172, 2-215, 28-258, 20-364 or 20-369 of a 172, 215, 258, 364, or 369 amino acid sequence, respectively, all fully defined in the specification, is new. (I) is a low molecular weight Actinobacillus pleuropneumoniae (APP) protein, designated Omp20, OmpW, Opm27, OmpA1 and OmpA2.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a purified polypeptide homologous to (I), or an analog or derivative of it;

(2) a fusion protein, comprising (I) joined to a carrier or fusion partner;

(3) an isolated polynucleotide homologous to a polynucleotide encoding Omp20, OmpW, Omp27, OmpA1 or OmpA2;

(4) an isolated polynucleotide encoding residues 1-19, 1-21, 1-27, 1-19 or 1-19 of the 172, 215, 258, 364 or 369 residue sequences, respectively;

(5) an isolated polynucleotide encoding (I) or the protein of (1) or (2);

(6) an oligonucleotide which can hybridize under stringent conditions to a 1018, 1188, 1171, 1922, or 1319 nucleotide sequence, all fully defined in the specification;

(7) a recombinant vector, comprising the polynucleotide of (5);

(8) a transformed cell, comprising the vector of (7);

(9) a vaccine against APP, comprising an antigen selected from (I), the polypeptide of (1) or (2), and the polynucleotide of (5), capable of inducing, or contributing to the induction of a protective immune response against APP in swine, and a carrier or diluent;

(10) a method of preparing a vaccine of (9), comprising mixing the antigen and carrier;

(11) a vaccine kit for vaccinating swine, comprising a container comprising the antigen of (9);

(12) an isolated antibody specific for (I);

(13) a diagnostic kit comprising (I) or the polypeptide of (1) or (2), and a secondary antibody directed against porcine antibodies, in a separate container;

(14) a diagnostic kit, comprising the antibody of (12), and a secondary antibody which binds to different epitopes on the APP protein, or is directed against the primary antibody, in a separate container; and

(15) a diagnostic kit, comprising a polynucleotide which can specifically hybridize or amplify an APP-specific polynucleotide molecule.

ACTIVITY - Antibacterial.

MECHANISM OF ACTION - Vaccine.

USE - The polypeptides and polynucleotides of the invention can be used as a vaccine against APP in swine. They can also be used as reagents in the diagnosis of APP infections (claimed).

Dwg.0/6

L39 ANSWER 15 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 10

ACCESSION NUMBER: 1998:558037 CAPLUS

DOCUMENT NUMBER: 129:255827

TITLE: Identification and sequencing of the groE operon and flanking genes of **Lawsonia intracellularis**: use in phylogeny

AUTHOR(S): Dale, C. Jane H.; Moses, Eric K.; Ong, Chin-Chui; Morrow, Chris J.; Reed, Michael B.; **Hasse, Dete**; Strugnell, Richard A.

CORPORATE SOURCE: Victorian Institute of Animal Science, Victoria, 3049, Australia

SOURCE: Microbiology (Reading, United Kingdom) (1998), 144(8), 2073-2084
CODEN: MROBEO; ISSN: 1350-0872
PUBLISHER: Society for General Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Proliferative enteropathy (PE) is a complex of diseases of com. importance to the pig industry. The obligate intracellular bacterium **Lawsonia intracellularis** is consistently associated with PE and pure cultures of this bacterium have been used to reproduce PE in pigs. In this study **L. intracellularis** bacteria were purified directly from PE-affected tissue. DNA extracted from purified bacteria was used to construct a partial genomic library which was screened using sera from **L. intracellularis**-immunized rabbits. Two seroreactive recombinant clones were identified, one of which expressed proteins of 10 and 60 kDa. The sequence of the insert from this clone, pISI-2, revealed ORFs with sequence similarity to the groES/EL operon of Escherichia coli, the 50S ribosomal proteins L21 and L27 of E. coli, a GTP-binding protein of Bacillus subtilis and a possible protoporphyrinogen oxidase, HemK, of E. coli. Primers designed from unique sequences from the pISI-2 insert amplified DNA from infected, but not non-infected, porcine ilea; the amplicon sequence obtained from tissue-cultured **L. intracellularis** was identical to the corresponding sequence in pISI-2, confirming the origin of the clone. The sequence of **L. intracellularis** GroEL and other GroEL sequences in the databases were used to construct a partial phylogenetic tree. Anal. of the GroEL sequence relationship suggested that **L. intracellularis** is not significantly related to other organisms whose GroEL sequences are held in the databases and supports previous data from 16S sequence analyses suggesting that **L. intracellularis** is a member of a novel group of enteric pathogens.

REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 11

ACCESSION NUMBER: 1997:457165 CAPLUS
DOCUMENT NUMBER: 127:94116

TITLE: **Lawsonia intracellularis** immunogenic components identification, DNA sequences, and uses for animal intestine infection vaccine or diagnosis

INVENTOR(S): **Panaccio, Michael; Hasse, Detlef**
PATENT ASSIGNEE(S): Daratech Pty. Ltd., Australia; Pig Research and Development Corporation; Panaccio, Michael; Hasse, Detlef

SOURCE: PCT Int. Appl., 94 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 9720050 | A1 | 19970605 | WO 1996-AU767 | 19961129 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG | | | | |
| CA 2236574 | AA | 19970605 | CA 1996-2236574 | 19961129 |
| AU 9676141 | A1 | 19970619 | AU 1996-76141 | 19961129 |
| AU 718333 | B2 | 20000413 | | |
| EP 871735 | A1 | 19981021 | EP 1996-938863 | 19961129 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| CN 1203630 | A | 19981230 | CN 1996-198666 | 19961129 |
| BR 9611623 | A | 19991228 | BR 1996-11623 | 19961129 |
| JP 2000502054 | T2 | 20000222 | JP 1997-520010 | 19961129 |
| NZ 322398 | A | 20000228 | NZ 1996-322398 | 19961129 |
| PRIORITY APPLN. INFO.: | | | AU 1995-6910 A | 19951130 |
| | | | AU 1995-6911 A | 19951130 |
| | | | WO 1996-AU767 W | 19961129 |

AB The present invention relates generally to therapeutic compns. for the treatment and/or prophylaxis of intestinal disease conditions in animals and birds caused or exacerbated by **Lawsonia intracellularis** or similar or otherwise related microorganism. The present invention also contemplates methods for the treatment and/or prophylaxis of such intestinal disease conditions and to diagnostic agents and procedures for detecting **Lawsonia intracellularis** or similar or otherwise related microorganism. The **Lawsonia intracellularis** genomic library was screened with immunoscreened with anti-**L. intracellularis** sera. Clones found to be pos. according to immunoscreening were sequenced. GroEL and GroES proteins are two immunogenic components that were identified. Examples also included immunofluorescent detection of **L. intracellularis** bacteria in pig feces, formalin-killed vaccines, and putative vaccine candidate sequences.

L39 ANSWER 17 OF 19 CABA COPYRIGHT 2004 CABI on STN

| | |
|---|---|
| ACCESSION NUMBER: | 96:39393 CABA |
| DOCUMENT NUMBER: | 19962202155 |
| TITLE: | Detection of ileal symbiont intracellularis in porcine faecal samples by polymerase chain reaction |
| AUTHOR: | McCormick, B. M.; **Hasse, D.**; Monckton, R. P. |
| CORPORATE SOURCE: | Department of Agriculture, PO Box 125, Bendigo, Australia. |
| SOURCE: | Veterinary Microbiology, (1995) Vol. 47, No. 3/4, pp. 387-393. 7 ref. ISSN: 0378-1135 |

DOCUMENT TYPE: Journal
LANGUAGE: English
ENTRY DATE: Entered STN: 19960318
Last Updated on STN: 19960318

AB Ileal Symbiont Intracellularis (ISI) [**Lawsonia intracellularis**, see VB 66, abst. 658], the organism causing proliferative enteritis (PE) in pigs was detected in faeces by the application of polymerase chain reaction (PCR). The assay based on a 319 base pair DNA fragment was used on faecal and mucosal samples derived from pigs either affected or unaffected with PE. As few as 10[sup3] ISI could be detected in pig faeces spiked with ISI. No amplification product was detected in the faeces of unaffected pigs but faeces of confirmed clinical cases were positive. This method offers an accurate, sensitive, easy to perform alternative to monoclonal antibody tests or histological examination post-mortem for the presence of ISI in pig herds.

L39 ANSWER 18 OF 19 CABA COPYRIGHT 2004 CABI on STN
ACCESSION NUMBER: 97:68300 CABA
DOCUMENT NUMBER: 19972206417
TITLE: Application of a polymerase chain reaction assay to diagnose proliferative enteritis in pig herds
AUTHOR: Holyoake, P. K.; Jones, G. F.; Davies, P. R.; Foss, D. L.; **Panaccio, M.**; **Hasse, D.**; Murtaugh, M. P.; Hennessy, D. P. [EDITOR]; Cranwell, P. D. [EDITOR]
CORPORATE SOURCE: Agriculture Victori. Bendigo Agriculture Centre, Bendigo, Vic., 3554, Australia.
SOURCE: Manipulating pig production 5. Proceedings of the Fifth Biennial Conference of the Australasian Pig Science Association (APSA) held in Canberra, ACT on November 26 to 29, 1995, (1995) pp. 171. 6 ref.
Publisher: Australasian Pig Science Association,. Werribee
Price: Abstract only; Conference paper
Meeting Info.: Manipulating pig production 5. Proceedings of the Fifth Biennial Conference of the Australasian Pig Science Association (APSA) held in Canberra, ACT on November 26 to 29, 1995.
ISBN: 0-646-25622-X
PUB. COUNTRY: Australia
DOCUMENT TYPE: Journal
LANGUAGE: English
ENTRY DATE: Entered STN: 19970612
Last Updated on STN: 19970612

L39 ANSWER 19 OF 19 JAPIO (C) 2004 JPO on STN
ACCESSION NUMBER: 2001-169787 JAPIO
TITLE: **LAWSONIA INTRACELLULARIS** PROTEIN, RELEVANT METHOD AND MATERIAL
INVENTOR: **ROSEY EVERETT LEE**
PATENT ASSIGNEE(S): PFIZER PROD INC
PATENT INFORMATION:

| PATENT NO | KIND | DATE | ERA | MAIN IPC |
|---|---|---|---|---|
| JP 2001169787 | A | 20010626 | Heisei | C12N015-09 |

APPLICATION INFORMATION
STN FORMAT: JP 2000-320736 20001020
ORIGINAL: JP2000320736 Heisei
PRIORITY APPLN. INFO.: US 1999-160922 19991022
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2001

AN 2001-169787 JAPIO

AB PROBLEM TO BE SOLVED: To isolate a **Lawsonia intracellularis** protein, and to provide a relevant method and a material.
SOLUTION: The isolated polypeptide molecule includes a nucleotide sequence encoding **L. intracellularis** htrA, ponA, hypC, lysS, ycfW, abc1 or omp100 protein, a substantial part in the nucleotide sequence or its homologous sequence. Relevant polypeptides, immunogenic compositions and methods for assay are described.


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